







CONFLICT

IN

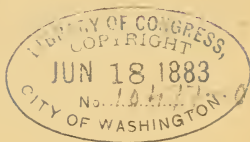
NATURE AND LIFE:

A STUDY OF

ANTAGONISM IN THE CONSTITUTION
OF THINGS.

FOR THE ELUCIDATION OF THE PROBLEM
OF GOOD AND EVIL, AND THE RECONCILIATION OF
OPTIMISM AND PESSIMISM.

John F. Johnson



NEW YORK:
D. APPLETON AND COMPANY,

-I, 3, AND 5 BOND STREET.

1883.

BI 431
.P2

COPYRIGHT BY
D. APPLETON & COMPANY,
1883.

PREFACE.

The development of the individual mind is not apt to be a uniform movement. It has critical stages when a new thought brings about a mental revolution. The writer may be permitted to illustrate by his own experience. He may recall as the first mental acquisition which necessitated new ways of looking at things, the idea that the brain is the organ of mind—that the mental faculties are dependent on physical conditions; as the second, the conception of natural law everywhere operative, which took the place of foreknowledge and predestination—these two allied forms of doctrine having been early forced upon his conviction by logical considerations on the old assumption of the government of the universe by personal supervision; as the third, the idea that mankind have made their own gods by magnifying and deifying human nature—this came with the shock of originality, to discover at leisure, however, that it was the common property of many thinking people, and that Xenophanes had explicitly taught it more than two thousand years ago; as the fourth, the doctrine of Evolution with the multiplicity of mental

readjustments which it necessitated; as the fifth, and last I shall name, the conception of inevitable and necessary antagonism in the constitution of things, in consequence of which the notion of universal harmony, attainable perfection, and unmixed happiness is Utopian and illusory.

This last point is the subject of this volume. It is now over twenty years since it was first suggested to the writer's mind by observation and reflection on human nature and its experiences in life. The conception may not strike the reader as "path-breaking" by any means, yet such has it been to the author. Each of the above-named acquisitions necessitated the dropping of something as error, which had previously been held as truth. This was not less the case with the last than with any of the others. It revolutionized his method of looking at the possibilities of life, and changed the direction of his efforts with regard to those possibilities. It seemed to have a practical use, as well as philosophical interest; and it occurred to him then to work it out in some of its scientific, historical, and practical relations, with the hope that it might be of interest to others, and perhaps, not altogether without a desirable influence on conduct. The writer has been in no haste to organize his study of the subject into a book, wishing it, whenever it might take form, to be as little crude as possible. Besides, he has been too busy with more immediate and pressing interests, to make rapid progress in the systematic study of a philosophical problem having such a multiplicity of connections as this.

The writer has been more solicitous to be true than to seem original. He has been more careful to strengthen the positions taken than to create the appearance of novelty in the statement of them. Between the critic who should pronounce the book true but not new, and the other who should

think it new, but singular and fanciful, it would be preferable to believe the former the more nearly correct. The principle of the work is not altogether new, as the author has sufficiently learned since it occurred to him; but the use heretofore made of it has been only partial and fragmentary. And however new the views of some of the chapters may have at one time seemed to the writer of them to be, a further acquaintance with the literature of the subject has made sad havoc with many of his originalities; and with every hour publication is delayed, this process of destruction is going on. As an example may be named the conception of the part Conflict plays in originating and strengthening sociality and political organization, the chapter on General History having been written before reading Mandeville, and years before Herbert Spencer's chapters, and Morgan's and Tylor's works, from which quotation is made on this subject, had been published. And quite generally it is true, that the quotations which have been used to corroborate statements have been met with since the chapters were written, and sometimes inserted without changing a word of the text. Each chapter bears evidence that somebody at some time and some place has been thinking pretty much the same thing. There may be some sparks of originality—still not put out—in parts of chapters; but if any claim of originality were made, that concerning the *ensemble* would, perhaps, be most likely to bear scrutiny. The effect of the whole, when all the parts are brought together as a co-operative unit, the author should hope, may go some way to convince the reader that the journey is not to be made wholly on a beaten track, nor yet wholly in vain. It is impossible to write a book without covering some ground which has often been gone over; so that if the author has not a central principle which organizes the old facts into new rela-

tions with new meanings, there is perhaps no very urgent need for his book. This book has been written precisely because it was believed that it embodies such a principle, able to determine a new application of known facts to an old study, and that, if, in some instances, the proof should fail, the treatment of the subject would nevertheless be usefully suggestive.

Those books are most successful which coincide with opinions already formed, or which are at least in process of formation among considerable bodies of people. The happy author is he who expresses clearly and incisively what a great many have already been feeling and thinking somewhat more vaguely. Like Socrates, he assists at the parturition of ideas. It depends much on the public temper whether an author shall be condemned for his pains or rewarded for his services. He may be sure that the leading affirmations of his book are true, and that, if appreciated, they would be fruitful of results; but he may have no assurance that the subject and his treatment of it will fall in so happily with the drift of the times as to secure attention. As this volume aims to strike the Middle Way, it has not the advantage of extremes which startle and fascinate. Its message is not so jubilant as optimism requires, nor yet so terrible as to administer like pessimism to the delight of desperation.

The author has persistently struggled against the increasing size of the volume. Everything suggested as a foot-note has been rigorously suppressed. The intelligent reader will readily see that the chapters are but *summaries* on a wide range of subjects which are legitimately linked together, in one way or another, by the common principle of Conflict. This great variety of subjects, touching at certain points and appealing to different tastes, seemed to render it desirable that certain chapters, brief though they are, should be made as complete, each

within itself, as possible, even at the risk of some repetition. The principal literary aim has been so to make the statement, that, with a reasonable degree of care and candor in the reading, it would not be easy to mistake the meaning intended.

THE AUTHOR.

NEW YORK, September, 1882.



CONTENTS.

PART FIRST.

THE SUBJECT IN HISTORY AND LITERATURE.

CHAPTER I.

ANCIENT CONCEPTIONS OF ANTAGONISM AND OF THE EVILS OF LIFE.

| SECTION. | PAGE. |
|--|-------|
| 1. The aim—Oriental views—Chinese, Hindoos, Egyptians, Persians | 1 |
| 2. Greek views—Pythagoras, Heraclitus, Cleanthes, Anaximander, Empedocles, Parmenides, Zeno, Anaxagoras, Plato | 3 |
| 3. Conflict as an element in primitive religions | 4 |
| 4. Evil in fate—Herodotus, Plutarch, Seneca, Cæsar, Pliny, Marcus Aurelius, the Stoics, and early Christians | 5 |
| 5. Greek poets on evil—Homer, Sophocles, Euripides, Aristophanes—Note | 7 |

CHAPTER II.

MODERN VIEWS OF PHYSICAL AND MORAL DISCORD.

| | |
|--|----|
| 6. Notions of evil—Diversity and relations | 9 |
| 7. St. Augustine's solution of the problem of evil | 10 |
| 8. Paley and Butler on the cause of evil | 11 |
| 9. Leibnitz and King on evil | 13 |
| 10. Geological difficulties—Hitchcock and M. Secretan | 14 |
| 11. A Philosopher, Moore, Rise and Fall, Bolingbroke, Blake, Goethe, Tyndall, Morselli, Hume, Erasmus Darwin, Harrison | 15 |
| 12. William Smith, Winwood Reade, Frances Power Cobbe | 18 |
| 13. Burton, Samuel Johnson, Rousseau, Bayle, Sainte Beuve, Carlyle, Mandeville, Lessing, Spenser, Prior | 19 |
| 14. The wail of poets | 21 |

CHAPTER III.

PESSIMISM.

| SECTION. | PAGE. |
|--|-------|
| 15. Schopenhauer's pessimism | 22 |
| 16. Hartmann's more moderate pessimistic view | 23 |
| 17. Hartmann—Why evil must outweigh good—Weighing emotions | 24 |
| 18. Hartmann—Most pleasures illusory—A gloomy picture | 25 |
| 19. Pessimism of Humboldt and Swift | 26 |
| 20. A disease of civilization—Mallock, A. Campbell, G. Smith | 27 |

CHAPTER IV.

OPTIMISM—PERFECTION AND THE GOLDEN AGES.

| | |
|---|----|
| 21. Compensation past and future for present misery | 30 |
| 22. Golden ages—Oriental, Greek, Jewish, Christian | 30 |
| 23. Modernized Christian view—Walker, Hitchcock | 32 |
| 24. Scientists and philosophers—Lubbock, Priestly, Mill, Greg, Spencer | 33 |
| 25. Spiritualistic optimism—Davis | 36 |
| 26. Socialistic and Radical—Fourier, Comte—Difficulties | 36 |
| 27. General—Rousseau, Reade, Hartley, Royce | 38 |
| 28. Shaftesbury, Condorcet, Godwin, Pope | 40 |

CHAPTER V.

THE PROBLEM STATED.

| | |
|---|----|
| 29. Optimism, pessimism, meliorism | 44 |
| 30. Opinion drifting from optimism to meliorism | 46 |
| 31. Different shades of meliorism—Purpose of the work | 47 |
| 32. Universality of Conflict—Note on pleasure | 48 |

PART SECOND.

CONSIDERATIONS FROM SCIENCE.

CHAPTER VI.

EXISTENCE.

| SECTION. | PAGE. |
|---|-------|
| 33. No conception possible of absolute beginning | 51 |
| 34. Idealism, realism, perception—Draper, Huxley—Entanglement | 52 |
| 35. Perceptions not copies—Cudworth, Reid, Stewart, Brown, Hamil- ton, Porter, Spencer's transfigured realism, McCosh, Lewes | 54 |
| 36. A Profession of Faith | 58 |

CHAPTER VII.

THE UNIT OF PHYSICAL EXISTENCE.

| SECTION. | PAGE. |
|--|-------|
| 37. Force and matter—Chu-hi, Faraday, Stallo, Macomber, Cooke, Maxwell, Tait and Thomson | 59 |
| 38. The force unit—Boscovich, Faraday, Bayma, Birks, Wiener, Maxwell, M. Couchy | 63 |
| 39. Vortex atoms—Maxwell, Tait, Helmholtz and Thomson, Wurtz, Macomber | 64 |
| 40. Order in the play of forces | 66 |

CHAPTER VIII.

THE PRIMARY FORCES.

| | |
|--|----|
| 41. Attraction and repulsion as primary forces | 67 |
| 42. Accounting for attraction by repulsion—Newton and Young, Glennie, LeSage, Walling, Croll | 69 |
| 43. Two primary antagonistic forces—Bayma, Birks, Norton, Hickok, Lewes, Kant, Taylor, Maxwell | 71 |
| 44. Primal force dual and antagonistic—Lamé | 76 |
| 45. Attraction and repulsion in early stages of the solar system | 78 |
| 46. Matter acquiring new properties by loss of heat—Lockyer, Faraday, Crookes—Notes | 79 |

CHAPTER IX.

CHEMISTRY AND PHYSICS.

| | |
|--|----|
| 47. The atom incomplete of itself—Affinity for other atoms | 82 |
| 48. The strife of atoms and molecules | 83 |
| 49. Affinity proportional to contrast of sensible qualities | 84 |
| 50. Three different forms of attraction—their antagonists | 84 |
| 51. Liberation of energy by the union of atoms and molecules | 85 |
| 52. The atom never at rest | 87 |
| 53. Elasticity of gases due to atomic motion—Stallo | 87 |
| 54. Opposite states necessary to a working force | 89 |
| 55. Overcoming resistance the leading idea of mechanics | 90 |
| 56. Polarity in physics and chemistry | 90 |
| 57. Obscured antagonism in orbital and vortical motion | 92 |
| 58. All the working energy of nature due to antagonism | 94 |

CHAPTER X.

CONFLICT IN THE BIOLOGICAL FORCES.

| | |
|---|-----|
| 59. Opposing activities within the organism—the rising scale of antagonism—Barker, Ludwig | 97 |
| 60. Waste and repair | 99 |
| 61. Breathing and circulation | 100 |
| 62. Contraction and expansion of the muscles | 101 |
| 63. Opposing factors determine the build and bulk of animals | 101 |
| 64. Conflict in plant life and in life generally—Tyndall, Ward | 101 |

| SECTION. | PAGE. |
|--|-------|
| 65. The war between species—DeCondolle, Spencer, Darwin . . . | 103 |
| 66. The warfare of animals—Van Benedin, Tennyson, Arnold . . . | 105 |
| 67. Parasites—Van Benedin | 107 |
| 68. Compensatory action between plants and animals . . . | 109 |
| 69. Superiority due to Conflict | 110 |
| 70. Persistence and divergence of type | 110 |
| 71. Antagonism between growth and reproduction a typical example . . | 110 |

CHAPTER XI.

ANTAGONISM IN THE SPHERE OF MIND.

| | |
|---|-----|
| 72. Mind and organization—Man's mind as a product of Evolution . . | 112 |
| 73. Primitive man a creature of war—First inventions due to Conflict . | 114 |
| 74. Communal sympathy fostered by common hostility | 117 |
| 75. Mental action counter-action—Lewes, Griesinger, Schiff, Huxley, Piderit, Bain, Maudsley, Luys | 118 |
| 76. Analogies illustrating mental reflex action—Lewes, Spencer . . | 124 |
| 77. Contrast necessary to mental action—Spencer | 126 |
| 78. Emotional reaction from one extreme to another | 126 |
| 79. Antagonism by exclusion in mental action | 127 |
| 80. Direct antagonism between the emotions—Buchanan | 128 |
| 81. Passional balance in mind and in society—Hobbes, Plato, Combe, Spinoza, Pope, Rousseau, Guizot, Buckle | 130 |
| 82. The will the theatre of Conflict—Hartley, Bastion | 133 |

CHAPTER XII.

CONFLICT AS A FACTOR IN MORALS.

| | |
|--|-----|
| 83. Order and utility in the social and defensive habits of animals— Spencer, Darwin | 135 |
| 84. Contest determining the incipient form of order | 137 |
| 85. Good behavior among animals—Uncle Sam, Zeke and the oxen, self- restraint in animals | 137 |
| 86. The Conflict which morality implies—Spencer, Hutcheson, Shaftes- bury, Campbell, Hickok, Lewes, London Times, Pouchet . . | 141 |
| 87. The leading element of morals—Utility, stress, Stephen | 147 |
| 88. Incipient morality among mankind—Darwin | 148 |
| 89. Courage and faithfulness the earliest virtues—Cicero | 149 |
| 90. Fixing moral intuitions and habits by association—Spencer, Lewes, Shaftesbury, Lecky | 151 |
| 91. Virtue founded in the plurality of interest—Tacitus, Billson . . | 153 |
| 92. Origin and development of woman's chief virtue | 156 |
| 93. Origin and development of the property instinct—Diderot . . . | 158 |
| 94. The Conflict definition of morality | 159 |
| 95. Religion and morality—Adaptation of moral codes—Moral heroism and survival | 160 |
| 96. Morality as command—A joker, Duke of Argyll, Mallock—The sanctions of morality—Note | 164 |

PART THIRD.

HISTORICAL BREVITIES ILLUSTRATING CONFLICT.

CHAPTER XIII.

GENERAL HISTORY.

| SECTION. | PAGE. |
|---|-------|
| 97. History a record of Conflict | 169 |
| 98. War-necessity first unites people—Infancy—Shaftesbury, Condorcet, Fiske, Cicero, Morgan, Mandeville, Spencer, Tylor | 170 |
| 99. Fealty to chiefs—Tacitus, Freeman, Lecky, McClellan—Early American confederations—Woolsey | 175 |
| 100. Origin of executive and legislative functions—Rowley, Spencer, Maine | 177 |
| 101. National integration and disintegration | 181 |
| 102. Progress and reaction—Stagnant China—Japan—The Jews | 182 |
| 103. The discord of class-interests increases with development | 185 |

CHAPTER XIV.

GRECIAN HISTORY.

| | |
|--|-----|
| 104. Forms of Conflict in Greece | 186 |
| 105. Athenian culture | 187 |
| 106. Oligarchy versus democracy | 187 |
| 107. State autonomy versus nationality | 188 |
| 108. State-alliances versus state-alliances | 191 |
| 109. Greece succumbed for want of nationality | 192 |
| 110. The fashion of war too strong for the traditions of kinship | 193 |
| 111. Development in Athens with stagnation in Sparta | 195 |
| 112. The good and evil of unscrupulous conflict | 195 |
| 113. Growing rationality versus tradition | 197 |

CHAPTER XV.

ROMAN HISTORY—THE REPUBLIC.

| | |
|---|-----|
| 114. Early leagues among the Latin kindred | 199 |
| 115. Struggle of different peoples on Italian soil | 199 |
| 116. The plebeian struggle for political rights | 200 |
| 117. The binding and explosive forces within Rome | 202 |
| 118. Slavery and piracy | 204 |
| 119. Social and civil wars and the fall of the commonwealth | 205 |

CHAPTER XVI.

ROMAN HISTORY—THE EMPIRE.

| | |
|---|-----|
| 120. Centers of conflict—Aggression versus resistance. | 205 |
| 121. Debauchery within, aggression without | 207 |
| 122. Rigidity of virtue necessary to the greatness of peoples | 208 |

| SECTION. | PAGE. |
|--|-------|
| 123. Developing weakness within | 208 |
| 124. Religious dissension—Donatists, Arians, natures of Christ, images, —Paulicians | 210 |
| 125. The Blues and Greens | 213 |
| 126. Prelude to the fall, and fall of Constantinople | 214 |
| 127. Fall of the empire into municipal fragments—Roscher | 214 |
| 128. Rise of the New from a complication of disturbance and conflict | 215 |

CHAPTER XVII.

EARLY ENGLISH HISTORY.

| | |
|---|-----|
| 129. Early struggles on English soil | 218 |
| 130. Minor conflicts—Unity and freedom through struggle—Magna Charta | 220 |

CHAPTER XVIII.

THE FEUDAL SYSTEM.

| | |
|--|-----|
| 131. Paradoxes of like and unlike systems—Feudalism and patriarchalism —Maine | 222 |
| 132. A question to whom fealty due | 224 |
| 133. The fall of feudalism by the growth of civilization—Freeman | 225 |

CHAPTER XIX.

THE CHRISTIAN SYSTEM UNDER CONTACT WITH OTHER SYSTEMS.

| | |
|--|-----|
| 134. With Judaism—Christianity composite by derivation | 227 |
| 135. With Paganism—Became polytheistic and idolatrous | 228 |
| 136. With the religions of the East—Gnosticism, Monachism, Mani- cheanism, the Marcionites, Paulicans, Albigenses, Calvin | 229 |
| 137. With Mohammedanism—Without influence on each other | 232 |

CHAPTER XX.

PAPAL SUPREMACY.

| | |
|---|-----|
| 138. The spiritual and temporal powers—The spiritual gets the upper hand | 234 |
| 139. Rise of learning and decline of the Papal power | 236 |

CHAPTER XXI.

THE GREAT MODERN CONFLICT.

| | |
|---|-----|
| 140. Innovation in primitive society, and later | 237 |
| 141. Kingcraft gained as priestcraft lost—Reformation—Finalities—Per- secution by Protestants—Tolerance through conflict | 239 |
| 142. Political action and reaction in France and England | 244 |
| 143. Traditions and dogmas vs. science—Mosaic geology—Theological "cranks"—Science and religion not antagonistic | 244 |
| 144. Change in the war of ideas—modified persecution—Greater sensi- bility—Loss with gain | 251 |
| 145. Incompatible ideas and methods of the same mind | 252 |
| 146. Two kinds of conservatism and two of liberalism | 253 |

Part Fourth
CHAPTER XXII.

ANTAGONISM AS A FACTOR OF EVOLUTION.

| SECTION. | PAGE. |
|---|-------|
| 147. Spencer's general definition of evolution | 256 |
| 148. Spencer's more distinctive definitions of evolution | 258 |
| 149. The line of motion under conflicting forces | 259 |
| 150. Rhythm a corollary of antagonism | 260 |
| 151. Conditions of mobility necessary to evolution | 261 |
| 152. Heterogeneity under action and re-action. | 262 |
| 153. Segregation and integration | 263 |
| 154. Antagonism a necessary condition of natural selection | 265 |
| 155. The tendency toward equilibrium | 266 |
| 156. The relative claims of antagonism and persistence | 269 |
| 157. Priority of antagonism over persistence | 266 |
| 158. Spencer's view that persistence is an ultimate datum of consciousness | 272 |
| 159. Counter-movement—Chauncey Wright—Degradation and dissolution as well as evolution—Cannot identify the maximum of general development | 275 |
| 160. Equilibrium—Blessedness or death? | 278 |
| 161. The moving equilibrium—Evolution advances pain as well as pleasure | 279 |

PART FIFTH.

EVIL IN RELATION TO THE NECESSARY CONDITIONS OF LIFE.

CHAPTER XXIII.

PARADOXES OF FEELING IN RELATION TO FUNCTION.

| SECTION. | PAGE. |
|--|-------|
| 162. Invigorating function pleasurable | 284 |
| 163. Buoyancy of temper favors early marriage and the sum of happiness | 286 |
| 164. Stimulants pleasurable—Harm in excess | 287 |
| 165. Labor a choice of evils—The price paid for enjoyment | 288 |
| 166. Proper labor invigorates—Mental growth and business necessity— Work and progress—Ease versus development | 290 |
| 167. Spencer's transmutation of labor into pleasure—Labor essentially repugnant and becoming more so | 292 |

CHAPTER XXIV.

MAN'S ENVIRONMENT—GEOLOGICAL CONDITIONS.

| | |
|--|-----|
| 168. Aqueous agencies conditions of life—Wearing away the land | 296 |
| 169. Volcanic and aqueous action antagonistic and co-operative | 299 |

| SECTION. | PAGE. |
|--|-------|
| 170. Pain from the antagonistic action which makes earth habitable— Torre del Greco | 302 |
| 171. Ante-geological theories of the earth—Burnet, Dick, Wesley, Gis- borne, Lyell | 304 |

CHAPTER XXV.

MAN'S ENVIRONMENT—ATMOSPHERIC AND OCEANIC CURRENTS.

| | |
|---|-----|
| 172. Ocean currents—Exchange of cold and warm waters makes life possible | 305 |
| 173. Atmospheric currents | 308 |
| 174. Counter currents of air and ocean and counter causes | 310 |
| 175. Discord and pain from the meteorological conditions of life | 310 |

CHAPTER XXVI.

MAN'S ENVIRONMENT—LIMITATIONS OF THE HABITABLE AREA.

| | |
|--|-----|
| 176. Extending the habitable area | 312 |
| 177. Desolation of lands by clearing and culture—Geikie, Marsh, Oswald—Terracing—Ruskin | 313 |
| 178. Difficulty of conserving the soil—Immediate, versus remote, inter- ests | 318 |
| 179. Absolute limitation of the habitable area | 320 |
| 180. Disturbances from change of climate—An ice age | 322 |
| 181. Oscillations of climate due to precession and eccentricity | 324 |

CHAPTER XXVII.

MAN'S ENVIRONMENT—ECONOMICAL DIFFICULTIES OF LIMITATION.

| | |
|--|-----|
| 182. Multiplying demands of increasing population versus supply by increasing labor, capital, and invention | 328 |
| 183. Progressive exactions of multiplying wants | 334 |
| 184. Will all the vacant places of the earth be filled up? | 336 |
| 185. Change of diet through over-population—Exclusive vegetable food | 338 |
| 186. Best results from a mixed diet | 340 |

CHAPTER XXVIII.

THE FUTURE OF PHYSICAL ENVIRONMENT.

| | |
|--|-----|
| 187. The possibility of harmony between man and his environment considered | 344 |
| 188. What would relieve physical discord would deteriorate the condi- tions of life | 345 |
| 189. Our present period may be the happiest—Alphonse de Con- dolle | 347 |
| 190. Visionary schemes for remodeling the environment | 350 |

CHAPTER XXIX.

ORIGIN AND CONFLICT OF NATURAL LAWS.

| | |
|--|-----|
| 191. What a law of nature is, and when it arises | 352 |
|--|-----|

| SECTION. | PAGE. |
|---|-------|
| 192. Interruption of one train of physical sequences by another | 354 |
| 193. Interference with organic action—Higher organisms easily disturbed | 355 |
| 194. Races and institutions conserved by sacrifice for the general good | 357 |
| 195. Exclusion of one good by another—Good from evil and evil from good | 359 |

PART SIXTH.

THE OUTLOOK, SOCIAL AND MORAL.

CHAPTER XXX.

SANITARY CONDITIONS.

| SECTION. | PAGE. |
|--|-------|
| 196. Ineradicable causes of disease—Malaria—Tropical heat | 363 |
| 197. Increase of death-rate with greater density of population—Brassey | 365 |
| 198. Conserving the feeble—Le Conte, Black, Darwin—The enfeebling vanities—Frances Power Cobbe | 366 |
| 199. Mining and machine industries—Nervous diseases—Dr. Beard—Insanity—Suicide | 369 |
| 200. The race overweighted—Galton—Human sacrifice | 373 |

CHAPTER XXXI.

PROSPECTS OF THE COMMON, WORKING PEOPLE.

| | |
|---|-----|
| 201. Influence of education on the happiness of the worker—Mandeville | 374 |
| 202. High wages and short hours, saving and improvement—Brassey, Greg, Florence Nightingale | 376 |
| 203. The drift under education to the cities and to fancy industries—Thompson, M. Salacis—Home influence—Race education—Emily Pfeiffer—High life in Rome—The worst most imitated—Teaching limited | 379 |
| 204. Improvement and discontent—De Tocqueville, Lecky—Vanity and degeneracy—Royce—Fashion in the church—Purifying civilization and comforting the lowly—Pleasure of discontent | 385 |
| 205—Adjustment of the laborer to his work—Mobility and diversified skill—Industrial education—Future changes | 390 |
| 206. Competition among laborers—The economical harmonies—Perry | 394 |

| SECTION. | PAGE. |
|---|-------|
| 207. Henry George's attack on Malthus—Ignoring capital—Persistence—Roscher—Causes of famines—Wealth and subsistence . | 396 |

CHAPTER XXXII.

INFLUENCE OF THE RELATIVE PROLIFICACY OF CLASSES ON SOCIETY.

| | |
|---|-----|
| 208. Incompatible facts—Arrest and acceleration of reproduction—Population not necessarily stationary under high civilization . | 400 |
| 209. Prolificacy in classes—No escape from toil—Beard—Education versus psychological elevation—Wright and Lowell—The great middle class | 404 |
| 210. Race multiplication—Intermixture and new races—Relative mortality | 408 |
| 211. Development in careers—Blood and brain necessary to elevation—Development of the individual mind—Improvement of mental type | 412 |
| 212. Recent progress—Reacting forces and the see-saw of nations—Summary of influences affecting the coming man—Note . | 417 |

CHAPTER XXXIII.

THE MARRIAGE RELATION.

| | |
|---|-----|
| 213. Protean forms of marriage | 420 |
| 214. Diversification of temper and increasing difficulties of marriage—Le Conte | 421 |
| 215. Increase of physical and mental divergencies between men and women | 423 |
| 216. Forms of divergence between the sexes—Controlling discordances of temper | 425 |
| 217. What marriage is—Conflicting views—Legality—The sentimental views—Mrs. Fancett—Education of children | 429 |
| 218. Moral and physiological discordance—Sex strengthened with civilization | 431 |
| 219. Marriage and prostitution—Lecky, Mandeville, Woolsey | 433 |
| 220. The right of maternity subordinated to a higher law | 435 |
| 221. Necessary origin of monogamic marriage under the play of social forces | 437 |
| 222. Affectional freedom—Differentiated marriage—Counter elements in marriage | 438 |
| 223. Modifications of marriage in the future—The Nation, Morgan—No matrimonial Utopia | 443 |

CHAPTER XXXIV.

THE RELIGIOUS CONSOLATIONS.

| | |
|--|-----|
| 224. Element of fear in primitive religions. | 446 |
|--|-----|

SECTION.

PAGE.

| | | |
|------|---|-----|
| 225. | Immortality—Devils versus angels—Dread versus joy—Heaven and hell corollaries—Suffering of the lost adding to the happiness of the saved—Peter Lombard, Edwards | 447 |
| 226. | Thinking versus believing—Doubtful compensation for loss of animistic faith | 451 |

CHAPTER XXXV.

PLEASURE AND PAIN INSEPARABLE.

| | | |
|------|---|-----|
| 227. | Pain necessary to the consciousness of pleasure | 454 |
| 228. | Sensation and its stimulus—Pleasures pall—Wealth and happiness—Cost of pleasures—Seneca | 455 |
| 229. | Mixed character of desire—Avoiding pain and seeking pleasure—Sully—Self-restraint as the price of pleasure—Franklin's moral algebra | 459 |
| 230. | Overcoming opposition—Pains of labor necessary to pleasure of attainment | 461 |
| 231. | The measure of satisfaction with wealth and office | 462 |
| 232. | Pleasure and pain proportional—Bouillier, Hinton—Same nerves for both—Enjoyment with high development—Mill, Wollaston | 464 |
| 233. | Utopia the creation of something out of nothing—Note, Saxon, Romanes, Hinton | 466 |

CHAPTER XXXVI.

USES IN GENERAL, SUMMARY AND CONCLUSION.

| | | |
|------|---|-----|
| 234. | The doctrine as a chart for direction—The best apt to do futile work—Optimistic and despondent temperaments—Sully | 469 |
| 235. | Artistic temperament and perfection—Panaceas—General indifference—Chartist and anti-corn law agitations—Guidance for sanguine reformers | 472 |
| 236. | Incompatible forms of reputed good—The sequel of prosperity—Careers of movement | 475 |
| 237. | The doctrine in relation to effort—Manliness of struggle—Caird—No warrant for insensibility—Bryant | 478 |
| 238. | Not incompatible with evolution | 479 |
| 239. | Shadows of good—Ours one of the happiest of human eras | 480 |
| 240. | Extremes in thought and action—Meliorism versus optimism and pessimism | 481 |
| 241. | Active minds most in need of guidance | 482 |
| 242. | Resignation—Spinoza, Seneca, Davids, Beard—Fortitude—The dying colonels | 483 |
| 243. | The Mean or Middle Way—The price of happiness | 484 |
| 244. | Logical value of the doctrine | 486 |
| 245. | The directive element growing out of scientific and industrial changes | 486 |
| 246. | Any doctrine best recommended by its truth | 488 |

CONFLICT IN NATURE AND IN LIFE.

PART FIRST.

THE SUBJECT IN HISTORY AND LITERATURE.

CHAPTER I.

ANCIENT CONCEPTIONS OF NECESSARY ANTAGONISM AND OF THE EVILS OF LIFE.

SECTION I.—There are two leading ideas of the subject contemplated: first, conflict in the relation of things; and secondly, the discord and pain which attend such conflict. The first, or that of physical conflict, has often been conceived of without being made the basis of an explanation of the evil in the world. Many of the views which follow regard physical antagonism as quite distinct from evil, or they regard evil as having no necessary connection with antagonism. It is the design here to bring the two together and show that they are related. If there is antagonism in the constitution of nature, the evil, both physical and moral, which exists, may be largely due to this antagonism, and itself a form of it, and thus as ineradicable as the constitution of nature itself.

Dualism, antagonism, and resulting evil are fundamental conceptions in the Oriental systems of philosophy and religion.

Chinese philosophy has long recognized the opposite properties of the two cardinal elements of nature. These are primal

force and primal matter; the one is the Yang, the active principle, the other the Yin, the passive principle, of all movement. The Yang and Yin are thus the polar forces from which proceed all action, all evolution. The law of balance is the order of nature. The Yang and Yin lie at the base of a general philosophical system which molds religion, morals, and the practical phases of life.

In the system of the Hindoos, matter and spirit stand in certain relations of antagonism to each other. Matter only becomes active in the production of phenomena under coercion by the spiritual principle, to which, however, it yields only in a partial and refractory manner; and hence, the evils of the world. While they hold that good and evil are dispensed by the same divine hand, yet the Hindoos have their good and evil deities. Vishnu and Indra are especially concerned for the welfare of mankind, while Ravana and his legion of evil spirits seek to do evil. The Sooras and Assooras represent good and evil as embodied in spirit and matter, and are perpetually at war.

In India, the good spirits, the Sooras, are the step-brothers of the evil spirits, the Assooras; as, in Egypt, Osiris, the good deity, was the twin brother of Typho, the god of evil.

Antagonism is even more pronounced in the Persian system. From the supreme and uncreated One proceeded two equal and antagonistic powers, which are forever battling for the upper hand in the control of the world. Ormuzd, the god of light, created a hierarchy of good spirits to attend to all things in the interest of good, whereupon Ahrimanes created an equal hierarchy of bad spirits to be everywhere present in the interest of evil. A good and an evil spirit attend every human being from birth to death, struggling with each other for the mastery over him.

Religions, like migrations, drifted westward, and these battle doctrines of the East have not been without influence on the religious and philosophical creeds of the West. And they acted the more readily as they fell in with the natural experiences of human life. The doctrine concerning Satan, the adversary of

God and man, was accepted by the Jews on their acquaintance with Persian dualism, and thence it found its way into the faith of the early Christians and spread throughout the world with the Christian system. Through a somewhat distinct line of more philosophical character, this strongly marked dualism of the Christian creed may be traced back through the Gnostics, Mani and Marcion, and the Fathers, Tatian and Justin Martyr, to the Brahminical doctrine which affirms the essential and eternal malignity of matter. This same doctrine, either by propagandism or by native reproduction, found its way into Greek philosophy, and through it into the general thought of European peoples.

SECTION 2.—Pythagoras held the principle of all things to be unity from which went forth an infinite dualism. His followers recognized certain co-ordinates, or offsetting principles, as finite and infinite, odd and even, the one and the many, the right and the left, male and female, light and darkness, good and evil, etc. The system viewed the world as harmonic, but regarded it as a combination of contraries.

Heraclitus maintained that fire, acting by opposite tendencies, is the cause of all the activities in nature, and that the products consist of contraries, so that even the good is evil, the living is dead, etc. Out of these conflicting impulses came what he regarded as "harmony." If "all life is change and change is strife," as he affirms, then is life but one of the forms of conflict. The suggestiveness to the ancient mind of the conflict in nature is shown by Heraclitus' doctrine, "That strife between opposite tendencies is the parent of all things." Cleanthes sings in his Hymn to Jupiter:

"Thy hand, educing good from evil, brings
To one apt harmony the strife of things."

Anaximander of Miletus held that from a divine substance of indefinite form in infinite space, all individual objects are projected by the separation of opposites.

Empedocles conceived of the activity of nature as dualistic, consisting in the reciprocal or complemental play of combina-

tion and dissolution. Back of the phenomenal lay the forces of love and hate ; the function of love being to combine, that of hate to dissolve. Love is, therefore, the creative, and hate the destructive power in the phenomenal world, where "all the members of God war together one after the other."

Parmenides conceived of the opposite principles in nature as, fire the ethereal essence, and night the phenomenal.

According to Zeno, the stoic, nothing exists without its contrary, as, the truth implies falsehood, and good is accompanied with necessary evil. It is especially to our purpose to note that, "Zeno, forming his views after the Ephesian Heraclitus, introduced even into his primordial matter a dynamic antagonism and a movement of fluctuation up and down."—(Grote, I., 513).

Anaxagoras taught the Eastern idea of the antagonism of mind and matter. Plato was by instinct an *a priori* optimist ; that is, God took things as he found them, and did with them the very best that was possible. Being good he must do what was best. In Plato's system, God and matter are from eternity distinct and opposite in character. Intelligence is good, but matter is, in consequence of its refractory nature, the source of all evil. Plato teaches that "contraries are produced from contraries," that there is reciprocity in the production and reproduction of things, and that, if this were not so, but "generation direct from one thing alone into its opposite," "all things would at length have the same form, be in the same state, and cease to be produced." The necessary association of pleasure and pain is thus given : "What an unaccountable thing, my friends, that seems to be, which men call pleasure ; and how wonderfully is it related towards that which appears to be its contrary, pain ; in that they will not both be present to a man at the same time, yet, if any one pursues and attends the one, he is almost always compelled to receive the other, as if they were united together from one head."—(Plato, I., 57).

SECTION 3.—Strife, battle, and all that pertains thereto have always occupied a large share of human attention. This was, of course, made necessary by the universal experiences of life.

Religion had its origin among primitive peoples through the contests they were compelled to wage with the powers of nature. It was in defeat, which they attributed to the interference of supernatural beings, that their emotional nature was most stirred, and they devised methods of placating such beings. The earliest gods were interested mainly in visiting evil on mankind. Religion was built up on the uncertain struggles of life; and out of this no doubt grew the deification of chieftains, strong in battle during life, and able and willing now, if honored with attentions, to avert defeat and other forms of evil. The gods of rude peoples are often beings of cruelty and horror exacting for their pleasure the sacrifice of the most precious things. Human beings have been sacrificed even on trivial occasions and for fanciful reasons. Most of the ancient gods were in the habit of inflicting pain upon very much such pretexts as men use; but among the Greeks it was especially the mission of the Furies to execute the vengeance of the gods and torment mankind. Black cattle were offered as a fitting sacrifice to the "infernal Jupiter," Night and the Furies. Among almost every people until far advanced in civilization, the worship of the gods of strife and war have possessed the most absorbing interest. This was true of the worship of Mars even at Rome. The chief god of the ancient Scythians was an iron cimeter fixed in the earth. And among our ancestors, the ancient Germans, death in battle was held to be the best preparation for the life hereafter.

SECTION 4.—Among the ancients we find recognition in practical life of the fatality of evil. This no doubt originated the story that, when a fit of tenderness seized upon Xerxes and he fell to weeping as he looked upon his vast army and reflected that in one hundred years not an individual in it would be alive, Artabanus, his uncle, observed to him that death was not the greatest of evils, as in all that host there was probably not one who had not many times wished for death as a relief from the greater miseries of existence. Herodotus' avenging Nemesis is a witness to the same melancholy view of life. The envy of the gods would not permit continuous prosperity and unmixed happiness; and Amasis

advised his friend, Polycrates, to do something to bring calamity upon himself in order to avert the jealousy of the gods and secure the prosperity which might remain. Solon is represented in an interview with Croesus, king of Lydia, to liken life to a contest in which there is uncertainty and danger to the end. Camillus' prayer on the taking of Veii assumes that so great a success must be attended with some necessary evil. On the same principle Fabius wanted a successor appointed to Scipio, whose successes were so great as to threaten misfortune. Paulus Æmilius found confirmation of the same doctrine when he lost his sons, one just before his triumph over Perseus, and another just afterward, while the sons of the conquered king still lived; and Æmilius is made to exclaim: "Nay, when I arrived safe among my countrymen, and beheld the city full of joy, festivity, and gratitude, still I suspected fortune, knowing that she grants us no favors without some mixture of uneasiness, or tribute of pain," Plutarch thought "that, perhaps, there is some superior being, whose office it is to cast a shade upon any great and eminent prosperity, and so to mingle the lot of human life that it may not be perfectly free from calamity;" and on this basis he explains the domestic misfortune of Pompey the Great. Seneca declared that "the whole of life is lamentable," and death "the best invention of nature." Cæsar contended that death was not a punishment but the end of human suffering. Pliny the elder believed that "no mortal is happy," and held that human beings are worse off in this respect than the lower animals. He doubted whether nature is to man a kind parent or a cruel step-mother, and believed the evils of life to be so great that death had been granted as man's chief good. The good emperor, Marcus Aurelius, was an optimistic philosopher, yet he declares that "life is a warfare and a stranger's sojourn." The stoical solution of the problem of evil is founded on a definition which begs the question: "Nothing is evil," says Marcus Aurelius, "that is according to nature;" and Seneca observes that "many afflictions may befall a good man, but no evil." And the good emperor illustrates: "But death certainly, and life, honor and

dishonor, pain and pleasure, all these things equally happen to good and bad men, being things which make us neither better nor worse. Therefore they are neither good nor evil.”—(Long. M. Aurelius Antoninus, section II., 17, 11.) And Seneca defines “pleasures and pains, prosperity and adversity, which can only operate upon our outward condition, without any proper and necessary effect on the mind,” as things which are “in themselves neither good nor evil.”—(Morals, 129.)

The New Testament view of the natural life of man is a thoroughly pessimistic one. The redemption purchased by the blood of Christ is most esteemed for the deliverance it brings from “this present evil world.” It is declared that, “If any man love the world the love of the Father is not in him.” And the glory of the life to come is most fully brought into relief by contrast with the pessimistic gloom which brooded over all earthly things. The kingdom of God and the kingdom of this world were set over against each other as opposite in character. Life here had value only as the battle-ground where Christians might win the victory of eternal life. It is but the extreme of this idea that has animated the ascetics of all religions. The ancient Stoic admitted the afflictions of life, but put them aside as if they were not, by his philosophical views of moral conduct; the ancient Christian recognized the evils of life, but triumphed over them by the exaltation of his faith in the life to come.

SECTION 5.—The Greek poets are full of the desponding view of life. Evil is wrapped up in Fate, and Fate dominates even the gods:

“The necessary ill
Will come; its fatal course no god can check.”

—[*Megara in Euripides.*

In the tragic vein evil is affirmed to outweigh the good; but this appears to have been a disputed point:

“Warmly this argument with others oft
Have I disputed, who assert that ill
To mortal man assigned outweighs the good,
Far otherwise I deem, that good is dealt
To man in larger portions: were it not,
We could not bear the light of life.”—[*Theseus in Euripides.*

Homer sums it up in this philosophical way:

"Two urns by Jove's high throne have ever stood,
The source of evil one, the one of good.
From thence the cup of mortal man he fills,
Blessings to these, to those distributes ills;
To most he mingles both; the wretch decreed
To taste the bad, unmixed, is cursed indeed,
The happiest taste not happiness sincere,
But find the cordial draft is dashed with care."

—[*Achilles to Priam.*]

Sophocles makes Philoctetes say :

"I did not doubt it: evil never dies;
The gods take care of that: if aught there be
Fraudful and vile, 'tis safe; the good and just
Perish unpitied by them."

In a similar vein is justice denied as an attribute of the gods:

"*Adic.*— What is justice?
There is no such thing—I traverse your appeal.

Dic.—How, no such thing as justice?

Adic.— No, where is it?

Dic.—With the immortal gods.

Adic.— If it be there,

How chanced it Jupiter himself escaped
For his unnatural deeds to his own father?"

—[*Aristophanes.*]

Still it was the pious humor to declare that the gods were just.

In Euripides it is affirmed that "no mortal man is happy;" that one may be more fortunate than another merely. And again:

"The happiest fate of man is not to be;
And next in bliss is he who, soon as born,
From the vain world and all its sorrows free,
Shall whence he came with speediest foot return."

The Greeks had a saying that those whom the gods love die young; and this coincides with the story of the Greek mother who, in the evening, prayed to the gods to bestow upon her sons their most precious gift: the prayer was answered, and in the morning she found her sons dead. Yet, notwithstanding this saying, and the moral of this apologue, the Greeks appear to have been a people who made the most of life and enjoyed it,

while they had no high opinion of the shadowy existence in Hades.

While there were ancients who had a vague idea of the strife or conflict in nature, they did not assume this as the basis of necessary evil and human suffering; they referred the miseries of existence to a different source—to the decrees of Fate and the humor of the gods. In all the concernments of life religion overwhelmed philosophy and science.

NOTE.—The statements of this chapter are to be found in books which are in most libraries, and few, if any of them, call for reference. They are in some sort the common possession of reading people. This, however, is not true of the statements in all the chapters of this book. The author would have been glad to give references, but the volume threatened to attain a size which would render this undesirable; and formal references have generally been omitted. Not all the quotations given have been taken direct from their authors. Whatever seemed to the purpose has been used, wherever found, provided the source seemed to be of sufficient authority. On disputed points more care has been taken to name the authorities given.

It may be added concerning the many extracts from authors nearly to the same points in the following and Fourth chapters, and to a less extent in others of the earlier chapters of the volume, that, while the method is not in the line of artistic book-making, it was adopted as the most authoritative means to the end in view. The reader may imagine some of these to be foot-notes, as there are no other, and touch them lightly, if he wishes.

CHAPTER II.

MODERN VIEWS OF MORAL AND PHYSICAL DISCORD.

SECTION 6.—These ancient views have been repeated from time to time throughout the entire intellectual history of the world. How much the doctrines of one period have influenced the formation of similar doctrines at a later period, it is impossible in most instances now to ascertain. The human mind in like

phases of evolution, is sure to fall into similar trains of thought, and work out independently similar systems of doctrine. But while the nucleus may be even identical, the ultimate form may be so shaded by the prevailing fashions of opinion at different periods of elaboration, as frequently to obscure the identity. The diversity is due rather to the different intellectual garniture of different nations, peoples, and periods, than to any essential difference in the constitution of mind, or in its methods of manifestation. The same nation in different stages of its career may evince different and even contradictory phases of thought and feeling. While rising it may be hopeful and buoyant, and optimism prevail; while sinking, despondency may attend calamity, and a pessimistic cloud brood over all.

The discussion of the difficulties concerning the constitution of the world in regard to discord and evil, became very different under the Christian scheme from what it had been in classical times. The old philosophers were little influenced by the prevailing systems of religion; but under the dogmas of Christianity the problem could not be divorced from theological considerations. It had become the leading idea that man has an immortal soul which is involved in sin, and in great danger of being lost. The whole question of physical and moral discord was merged in religious considerations concerning the origin and consequence of sin.

SECTION 7.—St. Augustine took hold of the subject with a determined hand, treating it metaphysically, and with a fertility of resource to which even the sophisms of his method bear witness. According to his view, sovereign good is that which cannot be corrupted. What is not good cannot be corrupted. Therefore, corruption implies good but not sovereign good. Things wholly deprived of good must cease to be; “for if they shall be, and can now no longer be corrupted, they shall be better than before, because they shall abide incorruptibly. And what more monstrous than to affirm things to become better by losing all their good? Therefore if they shall be deprived of all good, they shall no longer be. So long therefore as they are, they are good:

therefore whatever is is good. That evil then which I sought whence it is, is not any substance: for were it a substance it should be good. For either it shall be an incorruptible substance, and so a chief good; or a corruptible substance, which unless it were good could not be corrupted. I perceive therefore, and it was manifested to me, that Thou madest all things good." "Since no nature whatever is evil, and the name [evil] belongeth only to privation of good, but from things earthly to things heavenly, from things visible to things invisible, some things are better than others, being good; being unequal to this end, that they all might *be*." "And to Thee is nothing whatsoever evil: Yea, not only to Thee, but also to thy creatures as a whole, because there is nothing without, which may break in and corrupt that order which thou hast appointed it. But in the parts thereof some things, because unharmonizing with other some, are accounted evil; whereas those very things harmonize with others, and are good; and in themselves are good. And all these things which harmonize not together, do yet (harmonize) with the inferior part, which we call earth, having its own cloudy and windy sky harmonizing with it." "I did not now long for things better, because I conceived of all; and with a sounder judgment I comprehended that the things above were better than those below, but all together better than those above by themselves." "And I inquired what iniquity was, and found it to be no substance, but a perversion of the will, turned aside from Thee, O God, the Supreme, towards these lower beings, and casting out his bowels, and puffed up outwardly."—(Confessions, chapter VII.). Thus is God exculpated and man made responsible. This view of the negative character of evil has been worked over and over from that day to this, and is still to be found in the current discussions of the question of evil.

SECTION 8.—Under the doctrine of the government of the world by special Providence, the problem of evil was more formidable than it is under the modern idea of government by law. Well might the human mind falter in presence of the difficulty of explaining how evil and suffering came to exist,

when the Creator and Ruler of the world is infinite in wisdom, goodness, and power. In the popular religion of the Greeks the difficulty was not so great, since the gods themselves were made subject to inexorable fate. This difficulty of the Christian theist is akin to that of the Orientalists, who resorted to logical subterfuges to maintain their Supreme Intelligence free from the taint of matter. In the modern view, the system of natural law, or of perpetual sequence, not being interfered with or thwarted, becomes essentially but another form of fate. Theologians have availed themselves of the idea of persistent law to explain the existence of evil in keeping with the attributes of the Creator. Paley speaks of the thwarting or crossing of the natural laws; that is, he explains discord to be necessary conflict, though he expresses it mildly as inconveniences. "Of the origin of evil," he says, "no universal solution has been discovered; I mean no solution which reaches to all cases of complaint. The most comprehensive is that which arises from the consideration of general rules. We may, I think, without much difficulty, be brought to admit the four following points: First, that important advantages may accrue to the universe from the order of nature proceeding according to general laws; secondly, that general laws, however well set and constituted, often thwart and cross one another; thirdly, that from these thwartings and crossings frequent particular inconveniences will arise; and, fourthly, that it agrees with our observation to suppose that some degree of these inconveniences takes place in the works of nature."—(Natural Theology, 300). Bishop Butler observes: "Now, that which affords a sufficient answer to objections against the wisdom, justice, and goodness of the constitution of nature, is its being a constitution, a system or scheme, in which means are made use of to accomplish ends, and which is carried on by general laws."—(Analogy, 249). This, of course, assumes that ours is the best possible universe; and this implies that if the Maker of this universe is all-wise, all-good, and all-just, He is not all-powerful.

SECTION 9.—The magnificent theory of Leibnitz on the origin of evil is, that God in the beginning having revolved in his mind the conceptions of all possible worlds, decided in the interest of beneficence to order into existence the best one of them all. But from the dire experience of mankind, we know that this best possible world is full of evil; therefore, was God not able to overcome whatever it is that causes discord and pain. Orientalists found the cause of evil in the refractory character of matter; Leibnitz in the absolute character of essences and abstract forms. In the one case evil was referred to physical causes, in the other to metaphysical. Leibnitz says: "Evil comes rather from the abstract forms themselves; that is to say, from ideas which God has not produced by an act of his will, any more than numbers or configuration, and any more, in short, than all possible essences, which should be reckoned eternal and necessary—for they are found in the ideal region of possibles—that is to say, in the divine understanding."—(Quoted by Dr. Chalmers in *Natural Theology*.) On this view he affirms that God does not make wicked men; they are so from eternity, and are so freely, whatever that may mean. Thus is Leibnitz' God subject to the eternal and necessary ideas and essences, or abstract forms of fate, in the creation of the world, as Zeus and the other gods of the Greek Pantheon were subject to the personal form of Fate in ruling the world. As Plato's God works to patterns he did not create, so Leibnitz' God is hampered by necessities he cannot control.

William King, Lord Archbishop of Dublin, who wrote on the *Origin of Evil* two centuries ago, recognized similar metaphysical difficulties, only that they were still more intensely metaphysical, and on this basis he derived imperfection and evil in the actual world from the infinite goodness of God. He sets out with the affirmation that God cannot create a perfect being; which is quite unlike another metaphysical notion that whatever God creates must necessarily be perfect as it comes from his hand. But the Lord Archbishop's reasons why God cannot create a perfect thing are unanswerable, being as follows: That a per-

fect being would be self-existent, and if absolutely perfect would be God. He then proceeds to the solution of the problem: "God might indeed have refrained from creating, and continued alone, self-sufficient, and perfect to all eternity, but his infinite goodness would by no means allow it; this obliged him to produce external things, which things, since they could not possibly be perfect, the Divine Goodness preferred imperfect ones to none at all. Imperfection then arose from the infinity of divine goodness."—(p. 119). "If you say, God might have omitted the more imperfect beings, I grant it, and if that had been best he would undoubtedly have done it. But it is the part of infinite goodness to choose the very best; from thence proceeds, therefore, that the more imperfect beings have existence; for it was agreeable to that, not to omit the very least good that could be produced. *Finite* goodness might possibly have been exhausted in creating the greater beings, but *infinite* extends to all. The infinite power and goodness of God then were the causes why imperfect beings had existence together with the more perfect."—(p. 141, 142). This resembles the better judgment of St. Augustine, which taught him that the higher and lower of created things are better altogether than the higher by themselves.

SECTION 10.—It is the general faith throughout Christendom, or it has been until very recently, that pain and death came into the world as the penalty of Adam's transgression. On this view it is supposed that notwithstanding the presence and omnipotence of God, man is responsible for the physical, as well as for the moral evil in the world. Science, has, however, thrown difficulties in the way of this view by showing that pain and death existed on earth long anterior to the advent of man. Writers, who, at the same time, have been theologians and scientists, have not shrunk from grappling with this difficulty. As a sample of this kind of work, we may instance the Religion of Geology by Rev. Edward Hitchcock, president of Amherst college and geologist to the State of Massachusetts. He goes on to state that God, having intended to create man, and foreseeing his fall, must

needs so order creation as to adapt it to man's fallen condition and thus secure the harmony of the whole. "Death, therefore, entered into the original plan of the world in the Divine mind, and was endured by the animals and plants that lived anterior to man. Yet, as the constitution of the world is, doubtless, very different from what it would have been if sin had not existed in it, and as man alone was capable of sin, it is proper to regard man's transgression as the occasion of all the suffering and death that existed on the globe since its creation."—(p. 204). All the creatures which had existed on the earth during the geological ages for millions of years before the creation of man, were made to suffer and die, because Adam, when he should come, would eat of the forbidden fruit.

Independently, and in theological despair, perhaps, M. Secretan has put forth the same view of this difficult problem.—(Goldwin Smith.) While the logic is desperate and doing its utmost to put a cheerful face on things, it fails, since it concedes by implication that there is a gloomy and inexorable fatality which occasioned things to be as they are with all their ills.

SECTION II.—A quaint little work entitled "Rambles with a Philosopher," written at the antipodes, and published at Dunedin, New Zealand, in 1867, is devoted to an exposition of the "Rule of Contraries." Its illustrations from science are sometimes apt, sometimes fanciful. A few extracts will give the author's leading idea: "The rule of contraries is as little to be ignored by the moderns as by the ancients. . . . In it all things circulate, all things exist and have a being. This is true with regard to creation, organic and inorganic. Without the contraries what would the world be but chaos?" "Reaction is the soul of nature." "Nature in opposition is life." "Man thus to exist, is to be a mixture of contraries; the law of nature is not to be gainsaid." "With the creation of the world entered the establishment of opposite principles." "Every thing to exist must have two opposites." The author, of course, makes a hobby of contraries; and his applications of the doctrine are apt to be puerile, as when he makes his philosopher affirm of the "vaunted

American Republic," that while it retains its four millions of slaves to balance its four millions of voters, it will stand; but that when slavery is abolished, physical force running rampant, will destroy intelligence, put an end to the constitution, and "break the nation in pieces," when "four great nations will spring out of the debris"(!). The author makes no use of his doctrines to unlock the mystery of good and evil.

Dr. Moore, the author of works on psychological subjects published in England and in this country, declares that "Creation is a system of antagonisms. There are opposing forces both in the spiritual and physical world, and it is only in the diagonal between them that nature maintains her standing." "Man is the grand contradiction—a compound of paradoxes; for he is constituted not only of opposites but of contraries." He further recognizes the doctrine that pleasure and pain are inevitably bound up together, being different degrees of the same thing, and the one necessary to the existence of the other. All this is but the revival of very old doctrines which even the most pronounced optimists could not overlook.

The author of "The Rise and the Fall" says: "Thus it appears that when the Creator, having organized the inanimate universe with its method of forces and counter-forces, and formed the lower orders of animals, grade after grade, under the like system of impulses and checks in their subjective and objective conditions of being, came to create man, he constituted him upon no new principles, but both in his bodily structure and in his psychological system, in pursuance of this uniform and well-considered plan."—(p. 29).

The optimist, Bolingbroke, finds that the world's beauty is founded on contraries, and universal concord on the mutual opposition of principles and things. And according to William Blake, "Without contraries there is no progression. Attraction and repulsion, reason and energy, love and hate, are necessary to human existence. From these contraries spring what the religious call good and evil. Good is the passive and obeys reason, evil is the active springing from energy. Good is heaven—

evil is hell.”—(Marriage of Heaven and Hell). Goethe observed “that every action implies an opposite. Inhalation precedes expiration, and each systole has its corresponding diastole. Such is the eternal formula of life.”—(“Farbenlehre,” reported by Tyndall). And Tyndall, in a different connection, states it as follows: “A magnet attracts iron, but, when we analyze the effect, we learn that the metal is not only attracted but repelled, the final approach to the magnet being due to the difference of two unequal and opposing forces. Social progress is, for the most part, typified by this duplex or polar action. As a general rule every advance is balanced by a partial retreat, every amelioration is associated more or less with deterioration. No great mechanical improvement, for example, is introduced for the benefit of society at large that does not bear hardly upon individuals. Science, like other things, is subject to the operation of this polar law, what is good for it under one aspect being bad for it under another.”

A very recent writer says: “They judge wrongly who think that the evils of civilized society, such as misery, disease, prostitution, madness, suicide, are accidental and avoidable, but to those who look at things from the positive side, it appears clear that they are the effects of the same law of evolution to which all living beings are subject, and the aim of which is the well-being of animals, and for man that state of moral and physical perfection unconsciously desired by nature, and which metaphysicians define as the future happiness of the individual. These social evils represent the inevitable result of the struggle for existence.”—(Morselli, Suicide, 361). Evils follow like dismal shadows along the pathway of evolving good, and the latter cannot be had without the former, a proposition which following chapters may do something to elucidate.

According to Hume there are four causes of evil in the world: The employment of pains and pleasures to excite creatures to action; the conducting of the world by general laws; the economy of means in the production of results; and defect of operation in the great machine of nature. Before Paley, he wrote

that, in consequence of general laws and susceptibility to pain, "It scarcely seems possible but some ill must arise in the various shocks of matter and the various concurrence and opposition of general laws." He insists that nature is a congeries of parts which are liable to run into excess of action and fill the world with discord. "The whole presents nothing but the idea of a blind nature, impregnated by a great vivifying principle, and pouring forth from her lap, without discernment or parental care, her maimed and abortive children."—(Natural Religion.)

The optimist, Erasmus Darwin, is compelled to recognize the war in nature, exclaiming: "Such is the condition of the order of nature, whose first law might be expressed in the words, 'Eat, or be eaten,' and which would seem to be one great slaughter-house, one universal scene of rapacity and injustice!" Frederick Harrison has beautifully stated the grim facts as follows: "The world is not all radiant and harmonious; it is often savage and chaotic. In thought we can see only the bright, but in the hard fact we are brought face to face with the dark side. Waste, ruin, conflict, rot, are about us everywhere. If tornadoes, earthquakes, glacier epochs are not very frequent, there is everywhere decay, dissolution, waste, every hour and in every part of the vast cosmos. See nature at its richest on the slopes of some Andes or Himalaya, where a first glance shows us one vision of delight and peace. We gaze more steadily, we see how animal, and vegetable, and inorganic life are at war, tearing each the other; every leaf holds its destructive insect, every tree is a scene of torture, combat, death; everything preys on everything; animals, storms, suns, and snows waste the flower and the herb; climate tortures to death the living world, and the inanimate world is wasted by the animate, or by its own pent up forces."—(Nineteenth Century, August, 1881.)

SECTION 12.—In "Gravenhurst; or Thoughts on Good and Evil," Mr. William Smith gives his solution of the vexed problem on the stoical principle that, "What we call evil is only a condition of what is called good, and necessary to our conceptions of good as well as to its actual existence; but that without

which good cannot be, is not evil, therefore there is no evil." Westminster Review, Jan., 1865.) This is but the repetition of Plato, and more particularly of Marcus Aurelius and other stoics. It calls in the aid of a quibble and gets rid of evil by ignoring it. That evil is in some way necessary to good is no uncommon view of the subject. A modern optimist writes: "That unknown God has ordained that mankind should be elevated by misfortune, and that happiness should grow out of misery and pain. I give to universal history a strange but true title—The Martyrdom of Man. In each generation the human race has been tortured that their children might profit by their woes. Our own prosperity is founded on the agonies of the past. Is it, therefore, unjust that we also should suffer for the benefit of those who are to come?"—(Martyrdom of Man. W. Reade.)

So often what philosophy has taught, the muse has sung:

"God draws a cloud over each gleaming morn,—

Would you ask why?

It is because all noblest things are born

In agony.

Only upon some cross of pain and woe

God's Son may lie:

Each soul redeemed from self and sin, must know

Its Calvary.

—*Frances Power Cobbe.*

SECTION 13.—Very many who have left a record of their feelings appear to have despaired concerning the happiness to be enjoyed in life. The first witness we summon is Burton: "If we could foretell what was to come, and put it to our choice, we should rather refuse than accept of this painful life. In a word, the world itself is a maze, a labyrinth of errors, a desert, or wilderness, or den of thieves, cheaters, etc., full of filthy puddles, horrid rocks, precipitums, an ocean of adversity, an heavy yoke; wherein infirmities and calamities overtake and follow one another, as the sea waves; and if we 'scape Scylla we fall foul on Charybdis, and so in perpetual fear, labor, anguish, we run from one plague, one mischief, one burden to another, and you may as soon separate weight from lead, heat from fire, moisture from water, brightness from the sun, as

misery, discontent, care, calamity, danger, from man." Dr. Samuel Johnson declared that, in the present, man is never happy but when he is drunk; that is, only when in his delirium he is able to forget himself. He would not admit that he was himself happy. Rousseau testifies: "Souffrir est la premiere chose qu'il doit apprendre, et celle qu'il aura le plus grand besoin de savoir." "La félicité de l'homme ici-bas n'est donc qu'un état négatif; on doit la mesurer par le moindre quantité des maux qu'il souffre." Bayle: "Que l'homme est méchant et malheureux; qu'il y a partout des prisons et des hôpitaux; que l'histoire n'est qu'un recueil des crimes et des infortunes de genre humain." Sainte Beuve: "As soon as you penetrate a little under the veil of society, as in nature, you see nothing but wars, struggles, destructions, and recompositions." Carlyle: "Thus already Freewill often came in painful collision with Necessity, so that my tears flowed, and at seasons the child itself might taste that root of bitterness wherewith the whole fruitage of our life is mingled and tempered." Mandeville: "There is nothing good in all the universe to the best designing man, if either through mistake or ignorance he commits the least failing in the use of it; there is no innocence or integrity that can protect a man from a thousand mischiefs that surround him; on the contrary everything is evil which art and experience have not taught us to turn into a blessing."

In every conceit of thought and phase of feeling is the ancient world paralleled in the more modern. Lessing wondered at the foresight and good sense of his son, who on the day of his birth, had to be brought into the world by force, and was no sooner in it than he made haste to get out of it. Spenser sings in mournful strain:

"They crying creep out of their mother's womb;
So wailing back go to their woeful tomb."

And Prior:

"Who breathes must suffer, and who thinks must mourn,
And he alone is blest, who ne'er was born."

SECTION 14.—Poets may be quite generally visionary, and perhaps optimistic, but they are apt to sing in sad refrain. We may go to them for the wails of wrung hearts. The following from Byron appears to be pessimistic in spirit on a base of optimistic philosophy :

“ Our life is a false nature: 'tis not in
The harmony of things,—this hard decree,
This ineradicable taint of sin,
This boundless upas, this all-blasting tree,
Whose root is earth, whose leaves and branches be,
The skies, which rain their plagues o'er men like dew—
Disease, death, bondage,—all the woes we see,
And worse, the woes we see not—which throb through
The immedicable soul, with heartaches ever new.”

Shelly exclaims :

“ What is the world's delight?
Lightning that mocks the night,
Brief even as bright.”

And again :

“ We look before and after
And pine for what is not;
Our sincerest laughter
With some pain is fraught,
Our sweetest songs are those that tell of saddest thought.”

Cowper :

“ Ask what is human life—the sage replies,
With disappointment low'ring in his eyes,
A painful passage o'er a restless flood :
A vain pursuit of fugitive false good;
A scene of fancied bliss and heartfelt care,
Closing at last in darkness and despair.”

Young :

“ There's not a day, but to the man of thought,
Betrays some secret that throws new reproach
On life, and makes us sick of seeing more.”

Campbell :

“ Count o'er the joys thine hours have seen,
Count o'er thy days from anguish free,
And know, whatever thou hast been
'Tis something better not to be.”

Dryden :

"When I consider life, 'tis all a cheat;
Yet fooled with hope, men favor the deceit;
Trust on, and think to-morrow will repay :
To-morrow's falser than the former day."

And we may close with the mournful and mocking words of Voltaire :

"Ainsi du monde entier tous les membres gemissent :
Nés tous pour les tourments, l'un par l'autre, ils périssent :
Et vous composerez dans ce chaos fatal
Des malheurs de chaque être un bonheur general!"

CHAPTER III.

PESSIMISM.

SECTION 15.—Pessimism may be regarded as of two kinds, emotional and intellectual, and the two are not necessarily conjoined in the same mind. Some of the most pessimistic passages to be found in literature have been written, no doubt, by intellectual optimists; on the other hand, some pessimists by principle appear not to be pessimistic in feeling. This chapter has reference to systematic pessimism, that which has been intellectually elaborated and stoutly maintained as a great truth in philosophy. This has had its principal development in Germany. Schopenhauer may be regarded as the prince of pessimists. He conceived of the world as will and idea, or conception (*Vorstellung*). What appears to our senses as matter, as force, is will. He insists that by resolving force into will the problem is greatly simplified, since our acquaintance with will is intimate, personal, direct. This view of existence as will affords to Schopenhauer the basis of his doctrine, that pain greatly predominates in life. Will is a constant strife, and this strife is painful. He

sees only pain in desiring, wishing, which are but forms of willing, while the pleasure of gratification is so brief as to bear no comparison with the antecedent pain. All pleasure then is the deliverance from pain, and is consequently negative, while pain is positive. Upon this theory mankind live constantly below the emotional zero,—that point in feeling where it may be supposed the equal weight of pleasure and pain balance each other. Schopenhauer adopts the precise opposite of Leibnitz's view of the universe, and maintains that ours is the worst possible world, it being as bad as it can be and exist at all. Yet he contends that all we seem to gain by development is loss, and that the condition of things is becoming constantly worse instead of better. He sees no remedy for this deplorable state of things, but in abnegating the activities of existence, not by self-destruction, but by stilling the will, crucifying all desire, and crushing out all interest in life.

SECTION 16.—Hartmann, who is in some sense Schopenhauer's disciple, does not go so far. He does not believe that all pleasure is negative and all pain positive; for, though such is largely the case, he admits that there are sources of positive enjoyment—gratifications which are not necessarily coupled with any form of suffering. He instances as such the mental activities concerned in cultivating art and science. While he rejects Leibnitz's views of the privative character of evil and its ultimate extinction in a millennial future, he accepts his theory of "the best possible world." The evil so far transcends the good that it is a very bad world, but it is, nevertheless, the best possible. It is the best because it is the production of the Unconscious All-One which never errs (unless it possibly did so when by a "blind impulse of the will," it brought this bad world into existence). Still, it is the best possible because it is capable of being eventually annihilated! It is with reference to the excess of evil over good in existence and the desirableness of its extinction, that Hartmann has framed his curious and weak but brilliant speculative system, the "Philosophy of the Unconscious."

Hartmann maintains that if we have a universe at all, it must

be one in which there is more evil than good, more misery than happiness. There cannot be individualization without a whole train of attendant evils. There cannot be individualization without egoism, the preservation of self, involving conflict and the general crossing of purposes, with consequent injustice, cruelty, immorality, etc. He avers that since health, youth, freedom from anxiety, which constitute the greatest good, and contentment which constitutes the greatest happiness, do not sustain us above the emotional zero, therefore is the best possible form of existence worse than no existence at all. He declares that if mankind could wholly escape disease, could procure food from inorganic matter, and could secure all the pleasures of love without transcending the means of subsistence, nevertheless would all these acquisitions only palliate the worst of existing evils, and the sum of misery would still be greater than that of happiness. He is bound not to be pleased with life.

SECTION 17.—Hartmann finds four reasons why it is *a priori* impossible to create a world in which the pleasure shall outweigh the pain. 1. The lassitude and pain which follow when the pleasure of nervous excitement ceases; for nervous exhaustion increases the struggle against pain and weakens the power to retain pleasure, thus adding to pain and detracting from pleasure. 2. The indirect character of all pleasure, which consists in release from pain, this constituting most of the pleasures we enjoy. 3. The brief term of gratification, which is little more than a moment compared with the persistent presence of ungratified feeling which is commensurate with volition and desire, and for which there is only the palliation of hope, and the relief which gratification affords. 4. The greater facility of pain (than of pleasure), by its very nature, to come into consciousness. Elsewhere this is amplified by the statement that equal quantities of pleasure and pain united in consciousness are not of equal value; they do not offset each other—the pain outweighs; and the exclusion of all sensation would be preferable to such union of pleasure and pain.

We cannot regard this metaphysical method of treating the

subject as at all satisfactory. The operation of weighing pleasures and pains against each other, we take to be very much wanting in precision. In things so unlike, it is impossible to say how much of one is equal to so much of the other. Beside, there is no uniformity of standard for testing the relation. No two scales would show the same result. A Mill and a Schopenhauer, would measure life with standards so different that their results would not be comparable. The one has it that the balance of happiness over pain in life may be considerable; the other holds that any suffering at all in the world would overbalance all possible happiness, and make it a pessimistic world. Our estimate of the relative weight of pleasures and pains is very largely an affair of temperament, of sympathy, of mood, of health. Some natures of very elastic constitution will be happy any way, while others who are morbidly sensitive are bound to be miserable. Even the same individual in different moods would not make the same estimate of the relative proportions of suffering and enjoyment in life. Hence, although it will be necessary to speak of the relative proportions of pleasures and pains as if they were measurable, it must be with the understanding that this whole subject is one which is greatly wanting in precision.

SECTION 18.—Hartmann insists that most of the pleasures of life are not real but illusory. He measures happiness by the quality of its cause, and seems to think that there is a difference between the reality of happiness and the feeling of happiness. But we submit that if a man is happy, he is happy, whether the cause of it be some illusory hope, or the acquisition of something having what is called substantial value. Mankind have no doubt in all times past found most of their happiness in cherishing the manifold forms of delusion. The less they have been blessed the more they believed they would be blessed. Hartmann finds three stages of illusion among mankind; the first is the hope of securing happiness in this life. Under this head he examines the claims of the appetites and emotions, and their results in life, love, and the family, fame, religion, etc., and finding that they are all fraught with an excess of misery, he con-

cludes that the most to be hoped for is the least possible unhappiness. The second form of illusion is that which looks to a future life for happiness; and the third that which places it in some future period of existence on earth. But instead of becoming happier by what we call progress, as many fondly imagine, mankind are becoming more and more unhappy. Rousseau would go back to primitive life for relief from the abominations of civilization; Hartmann would not stop there,—he insists on going back to a point beyond the very beginning of existence to get rid of the misery of existence.

He presents an eloquent and gloomy picture of the old age of the world when all the illusions have been outlived; when the last hope has died, and all that ever seemed to be desirable is in the past: when it is thus realized that there is nothing more to look forward to, and decrepit humanity hobbles along from day to day, knowing that the most to be expected is a diminution of suffering, and longing for nothing so much as quiet, peace, eternal sleep. Having exhausted every hope and every effort for happiness, having realized to the uttermost the folly of existence, the only thing left to contemplate as desirable in destiny is the painlessness of utter extinction, the Nirwana!

Hartmann does not treat the question of good and evil in its physical, but only in its mental, relations.—(*Philosophie des Unbewussten*, XI., XII.).

SECTION 19.—There are pessimists who frame theories, but act precisely as if their theories had no relation to conduct. Hartmann is a married man and may leave successors to suffer the pangs of existence. Alexander Von Humboldt framed no pessimistic theories—he was too busy with science; but he governed his life in a weighty matter by pessimistic considerations. Hear him: “I was not born in order to be the father of a family. Moreover, I regard marriage as a sin, and the propagation of children as a crime. It is my conviction also that he is a fool, and still more a sinner, who takes upon himself the yoke of marriage—a fool, because he thereby throws away his freedom,

without gaining a corresponding recompense; a sinner, because he gives life to children, without being able to give them the certainty of happiness. I despise humanity in all its strata; I foresee that our posterity will be far more unhappy than we are; and should not I be a sinner, if, in spite of this insight, I should take care to leave a posterity of unhappy beings after me? The whole of life is the greatest insanity. And if for eighty years one strives and inquires, still one is obliged finally to confess that he has striven for nothing. Did we at last only know why we are in this world! But to the thinker, everything is a romance and riddle, and the greatest good luck is that of being born a flathead.”—(Quoted by Dr. Bowen in *North American Review*, November, 1879).

It must be admitted that this is eloquent and direct. It comes from a man of large experience, and if it be regarded as having weight, we may conclude in the spirit of the wail itself, that such views and feelings concerning life are only too apt to be the scourge of intellect; and one of the conditions of the “good time coming” is said to be the enlargement and enlightenment of intellect—a conflict of authorities with which we are not here properly concerned. The wail of the great scientist may be properly supplemented by that of the great satirist, Swift, who celebrated his birthday as a day of mourning: “Although reason were intended by Providence to govern our passions, yet it seems that in two points of the greatest moment to the being and continuance of the world, God has intended our passions to prevail over reason. The first is the propagation of our species, since no wise man ever married from the dictates of reason. The other is the love of life, which from the dictates of reason every man would despise, and wish it at an end, or that it never had a beginning.”

SECTION 20.—The melancholy view of life morbidly dwelt on appears to be in some sort a disease of civilization. It prevailed in ancient Greece and Rome, and it no doubt helped stoicism to its general acceptance in the Roman world, and furnished to Christianity the soil in which its characteristic contempt for the

flesh and the world took root and grew. In our own times pessimism is not confined to Germany by any means. Its "black hosts" are advancing into other countries, and pitching their tents as usual in the very centers of civilization. Where there is most enlightenment there appears to be most pessimism. English-speaking peoples are not apt to be demonstrative with heretical views; and if any had embraced the pessimistic tenets, they would be less apt, perhaps, than some others, to push them openly on their inherent merits. It is safer to state offensive doctrines in the interest of more grateful views. This is especially well illustrated in the writings of Mr. Mallock, in which, however, there is much heroic assertion and not a great deal of judicial thinking. His thoroughgoing pessimism is put forward as a basis on which to push the claims of an authoritative religion.

He declares: "Nature, as positive observation reveals her to us, is a thing that can have no claim either on our reverence or our approbation. Once apply any moral test to her conduct, as J. S. Mill has so forcibly pointed out, she becomes a monster. There is no crime that men abhor or perpetrate that nature does not commit daily on an exaggerated scale. She knows no sense, either of justice or mercy. Continually, indeed, she seems to be tender, and loving, and bountiful; but all that, at such times, those that know her can exclaim to her, is

'Miseri quibus
Intentata nites.'

"At one moment she will be blessing a country with plenty, peace, and sunshine, and she will the next moment ruin the whole of it by an earthquake. Now she is the image of thrift, now of prodigality; now of the utmost purity, now of the most revolting filth, and if, as I say, she is to be judged by any moral standard at all, her capacities for what is admirable not only make her crimes the darker, but they also make her virtues partake of the nature of sin. How, then, can an intimacy with this eternal criminal be an ennobling or a sacred thing?"—(Is Life Worth Living).

What then makes life worth the living? Revealed religion.

This conjunction of a bad system of nature with a good scheme of redemption is not new. Mr. Mallock himself says: "The emptiness of the things of this life, the incompleteness of even its highest pleasures, and their utter powerlessness to make us really happy, has been at least for fifteen hundred years a commonplace, both with saints and sages. The conception that anything in this life could of itself be of any moment to us, was considered as much a puerility unworthy of a man of the world, as a disloyalty to God."

Dr. Alexander Campbell, the founder of Bethany college and of a sect in this country, opposed natural theology on something very like pessimistic grounds. The blighting frost served his end as the earthquake does Mallock's. Goldwin Smith believes that, "Upon the materialist hypothesis of life the pessimist has the best of the argument; and the effect of his unsparing scrutiny will soon appear." He declares that pessimism has the best of it, if there be no life beyond. It is not improbable that with the conquests of science, the prevalence of "hard-headed" methods, the spread of knowledge, and the intensities of civilization, there may be going on a pronounced reaction from optimism toward pessimism, which will be seized upon by certain influential orders to advance the interests of ecclesiasticism, as affording the only panacea for the infirmities of our common nature.

CHAPTER IV.

OPTIMISM—PERFECTION AND THE GOLDEN AGES.

SECTION 21.—The optimist is one who takes a cheerful view of the possibilities of life, and believes in the positive and prevailing character of good and the negative and incidental nature of evil. An extreme form of optimism is, that by means of continuous progress or providential interference, all evil will finally disappear, earth will become a paradise, and life thereon elysian. This is both retrospective and prospective. There was once a time in contrast with the present when men were happy, and there will be such a time again. Nothing is more natural than the origin of such visions. The abject concern themselves in imagination with pomp and power, the indigent with heaps of gold, the hungry dream of feasts. There is always so much in the present to baffle and defeat, that the thoughts by way of compensation revert to a happier period in the past, "the good old times," or "the golden age," or they reach into the future when discord will end and paradise will be restored. This poverty of life, which will be rich in imaginary treasures, very generally refers the period of fruition to a future state of existence; but at the same time almost all peoples and religions have such a period in store for the future of life on earth.

SECTION 22.—The Chinese are taught in their sacred writings that there was in the beginning an age of purity, harmony, rationality, justice, and unalloyed happiness. Confucius prophesied a future golden age for the Chinese empire when it should cover the whole earth, and under the auspices of a divine man secure universal happiness for mankind. The Brahmins, Buddhists, all who derived their speculative ideas from the Hindoos,

believe in a golden age past and another to come. The Persians look forward to a glorious time when even Ahrimanes and his imps will all become lovers of good, and mankind, rejoicing in peace and harmony and in the ecstasy of every innocent delight, will not even cast shadows on the earth, now renovated into physical perfection.

So ancient a Greek as Hesiod mourned the degeneracy of his times, and looked back to the reign of Saturn as the golden age of the world, when men lived like the gods, and with the gods, and were happy. Even Plato had his golden ages, one past, the other to come. He adopts Hesiod's idea of the age of Saturn, giving it, however, the Platonic coloring. God was then the Prince and common father of all, and governed the world in person, and not as now by inferior deities. The products of the earth were spontaneous, and the climate was so genial that people had no need of clothing. They reclined on beds of moss perpetually verdant, and were so mildly tempered that violence and cruelty were unknown. And only think of the contrast with all the historical period: there were neither magistrates, nor any civil policy, for all men were governed by reason and the love of order!

The Jews had their paradise at the beginning, and the end was to be equally happy, and more glorious still. There was to come a prince of the royal line of David, and he would bring together from among the nations the dispersed fragments of the chosen people, and summon from the dead all worthy Jews to be united with the living on a purified earth; and to reign with Him in bliss and glory for a thousand years. The Jews had suffered defeat and calamity, and had by no means been a righteous and happy people; they had incorporated into their system the Magian ideas of an evil principle in the world, and had given it anthropomorphic form as Satan, the chief of evil spirits, yet—it may be truly said, *therefore*—they dreamed of a millennium, as the destitute and hungry dream of plenty. The Jews were to be in paradise regained, and the hostile nations to be turned into hell. Even the Alexandrian Jews, with their

advantages of Greek culture, though they modified the idea with a little leaven of rationality, expected, nevertheless, a miraculous deliverance and endless ages of peace and happiness on earth.

The prevailing Christian view is but a modified transcript of that of the Jews. The elements are to melt with fervent heat, and there is to be a new heaven and a new earth, and Christ is to descend and reign with his saints for a thousand years. The prophecy of Isaiah is to be fulfilled, and ravenous beasts are to lose their ferocity, and poisonous serpents their venom. "They shall not hurt nor destroy in all my holy mountain: for the earth shall be full of the knowledge of the Lord, as the waters cover the sea."

SECTION 23.—These ancient views are fully paralleled by those of modern times. What was held to be true under the notion of divine personal government, is still held to be true, though in a modified form, under the modern doctrine of natural law. And in periods when it was found that by the action of regular sequence, the course of things is obviously that of progress, still further modifications were made necessary by this new phase of intellectual experience. Even theologians have pressed the fact of progress into the service of their own peculiar views of future perfection. The following is an example: "The existence of a principle of progress in the creation being established, it is unwarrantable to suppose that its operation will cease until it has produced perfection. The fact that it is an established method of the divine procedure is evidence of its stability. We may announce it as an axiom that the *will of God is realized only in the perfect*. We have proved that the perfect in creation is attained by progress. The operation of the principle, therefore, must continue until it has accomplished a perfect result. Such a result is not attained in the present constitution of things, hence we may confidently look for a further development of the divine plan."—(God Revealed in Creation and Christ, Rev. J. R. Walker, p. 126).

Equally sanguine of man's future on earth is President Hitchcock, referred to in a previous chapter (section 10). He presses

geology into the service of theological optimism: "But we have reason to believe, from the Christian scriptures, that the next economy of life which shall be placed upon the globe will far transcend all those that have gone before. Every vestige of sin, suffering, decay, and death, will disappear. . . . In short, the change is no other than the conversion of the world into Heaven."—(Relig. Geol. p. 395).

SECTION 24.—Equally as extreme and sanguine as the above are the views of certain scientists and scientific philosophers. We quote: "It will, I think, be admitted that of the evils under which we suffer nearly all may be attributed to ignorance or sin. That ignorance will be diminished by the progress of science is of course self-evident, that the same will be the case with sin, seems little less so. Thus, then, both theory and experience point to the same conclusion. The future happiness of our race, which poets hardly ventured to hope for, science boldly predicts. Utopia, which we have long looked upon as synonymous with an evident impossibility, which we have ungratefully regarded as 'too good to be true,' turns out on the contrary to be the necessary consequence of natural laws, and once more we find that the simple truth exceeds the most brilliant flights of the imagination."—(Prehistoric Times, John Lubbock, pp. 491, 492). This reminds one of Condorcet and Godwin; and it well illustrates the persistence of ideas to find a scientific writer with the advantages of modern research, and a practical scientist withal, so accurately reproducing Priestley's faith in a time coming which "will be glorious and paradisiacal beyond what our imaginations can conceive."

The following is from one who has represented, and who still represents, a large and influential class of thinkers, sometimes designated as "hard-headed": "In a world in which there is so much to interest, so much to enjoy, and also so much to correct and improve, every one who has this moderate amount of moral and intellectual requisites is capable of an existence which may be called enviable. . . . No one whose opinion deserves a moment's consideration can doubt that most

of the great positive evils of the world are in themselves removable, and will, if human affairs continue to improve, be in the end reduced within narrow limits. . . . All the grand sources, in short, of human suffering are in a great degree, many of them almost entirely, conquerable by human care and effort, etc.”—(Utilitarianism, J. S. Mill, 21, 22). This is very careful, indeed, and can hardly be regarded as optimism ; it is rather meliorism with an optimistic bias.

A more recent writer states the case with much less reserve : “Some believe only that a considerable number of human evils may be materially mitigated ; others more buoyant have convinced themselves that with time, patience, and intelligent exertion, every evil not inherent in or essential to a finite existence, may be eliminated, and the yawning gulf between the actual and the ideal at last bridged over. This faith is mine. I hold it with a conviction which I feel for scarcely any other conclusion of the reason. . . . I distinctly refuse to believe in inevitable evils.”—(Enigmas of Life, W. R. Greg). This is sufficiently optimistic ; but the writer’s thoughts do not seem to have been well defined. If there are evils which are “inherent in or essential to finite existence,” then there are “inevitable evils.” But the writer does not believe in inevitable evils ; then, is his qualification, “inherent in or essential to finite existence,” totally without significance?

Whatever Herbert Spencer’s present views, he has been an extreme optimist. He will himself state it : “Finally, all excess and all deficiency must disappear ; that is, all unfitness must disappear ; that is, all imperfection must disappear,” and at the close of a long sentence intended to warrant this climax, he affirms : “So surely must the human faculties be moulded into complete fitness for the social state ; so surely must the things we call evil and immorality disappear ; so surely must man become perfect.” Again, “Then for the first time in the history of the world will there exist beings whose individualities can be expanded to the full in all directions, and thus as before said, in the ultimate man perfect morality, perfect individualiza-

tion, and perfect life will be simultaneously realized.”—(Social Statics, London, pp. 64, 65, 441). This idea of human perfection as a possible and attainable thing runs all through this early work of the author's; and the closing words of the first edition of his Psychology are in the same vein, when he speaks “of grand progression which is now bearing humanity onward to perfection,”—not toward, but to perfection. In First Principles (first Am. ed., p. 486; second ed., p. 517), speaking of the persistence of force, the author says: “After finding that from it are deducible the various characteristics of evolution, we finally draw from it a warrant for the belief that evolution can end only in the establishment of the greatest perfection, and the most complete happiness.” In justice to Mr. Spencer it must be observed that in the new edition of his Psychology (New York, vol. I., p. 503), he modifies the quotations we have given from the first edition to “that grand progress which is bearing humanity onwards to a higher intelligence and a nobler character,”—a very significant change. Whatever may be the extent of change in Mr. Spencer's optimism, our quotations are still just, and fairly serve our purpose, inasmuch as they show how the prevailing Utopianism among liberal thinkers has involved so great a mind as his, and given color to his philosophy.

Since the preceding was written Mr. Spencer has published his Data of Ethics. This work, it may be presumed, contains the author's matured views on the happiness question of “humanity on earth.” It appears to be really as optimistic as his work on Social Statics, without the indulgence, however, of rhetorical flourishes in the optimistic vein. The cast of the future is somewhat more subdued in tone, and subjected to more thoughtful qualification, as in what is said, for example, of absolute and relative ethics. But this entire matter of “absolute ethics” appears to be an *a priori* figment of the artistic faculties, which, like all the Utopias, defies the stubborn fact of human nature. It is the beautiful creation of an amiable bias. Mr. Spencer still believes that mankind may become so thoroughly fitted to their situation, so completely harmonized with the con-

ditions of life on earth as to secure unmixed pleasure in all the emotional, mental, moral, and physical activities of being. If, as he believes, all pain is the result of wrong-doing, then with right-doing, which he believes to be possible, all pain would come to an end. This is abundantly optimistic. Nothing need be added here. Some of the points in the optimistic phases of Spencer's evolution-philosophy will be noticed in future chapters.

SECTION 25.—There is a large class of people in this country known as Spiritualists, whose philosophy is distinctively "harmonial." The doctrine is confidently held that a state of perfect harmony and happiness is possible in this life, and that it is to come about in accordance with law through the influence which the spirit world is able to exercise over humanity on earth. "There is nothing more positively certain than that the *Harmonial Age* will eventually dawn upon this rudimental world." "Therefore, when accomplished, unity will be the harmony of man with himself, with his neighbor, with the universe—or, with Father-God and Mother-Nature."—(Magic Staff, A. J. Davis, p. 382, 383). The burthen of Mr. Davis' first work, his *Divine Revelations of Nature*, which is also the first philosophical product of the Spiritualistic school, is to define and establish the "Harmonial Philosophy," and the whole library of literature which has followed it from Spiritualistic writers, is in the same vein, and molded by the same purpose. Evil is regarded as privative, negative, incidental, as merely the friction of a divine (or natural) scheme of progress, which will carry mankind beyond the reach of all suffering into an earthly state of unalloyed bliss. The orthodox millenium is to come through miracle by the direct action of the Supreme Ruler; the Spiritualistic millennium is to come through natural law by the joint action of men and spirits.

SECTION 26.—Another class, becoming constantly larger, and consisting of several schools, are the socialists and radicals. Upon the notions of none more than of these does the future peace or discord of society depend. Whatever the panacea they offer for the miseries of life, they acknowledge no inherent or

necessary evils. They may allow of some as pertaining to an undeveloped condition of the earth and man, but the cardinal idea is that perfect harmony and order exist in the natural constitution of things, and are destined sooner or later to be fully established on earth. I may quote from Mr. Brisbane's rendering of Charles Fourier as an example: "First, that the reign of order, harmony, and happiness can be established on this earth; secondly, that to attain this great end a true system of society must be discovered and organized in the place of the present false and incoherent systems; thirdly, that the true system must be based upon the laws which govern creation, and which produce order and harmony in its various departments.—(Social Destiny of Man, p. 52).

The thought appears never once to be entertained that the present system has come about by the natural action of laws, to which man himself in all the departments of his being and relations is irrevocably subject, or that changes for the improvement of the future can only take place through the steady operation of these laws. No, "the true system" is to be "discovered" and formally applied in accordance with imaginary laws to bring order and harmony out of anarchy and discord! The stream is to be turned suddenly and made to run against the natural tendencies of gravity. Even Comte and his followers, positive in their methods as they claim to be, conceive as practical a scientific and formal organization of society to take the place of the present system of unnatural disorder and anarchy.

Most socialists would stoutly deny any faith in the Hebrew tradition about the fall of man and its dire consequences, which has served theology so well in accounting for the wickedness of mankind, but they all assume that somehow or other, society has become as completely disordered, as if every word concerning the fall was true. Wrong exists because somebody is doing wrong who might do right. The rulers of the earth do wrong; the rich men of the world do wrong; the upper classes of society do wrong; indeed, pretty much everybody is doing wrong; and this is what makes all the injustice and suffering among man-

kind. Socialists believe that they are able to specify what should be done in order that justice, plenty, peace, and happiness should prevail everywhere. Hence, the attitude is one of hostility to all these wrong-doers. They fully believe that if they could get into power, they would make such laws and establish such conditions of life that earth would speedily become a paradise. The methods vary; some think the change so desirable may be brought about by voluntary association or co-operative effort retaining individuality; others would merge the individual in the general mass, and by some sort of constituted authority appoint for each the place that will make him happy. It is to be paternalism and fraternity instead of individuality and free competition. Many look to the State as the power which should renovate society. Their optimism is complete, seeing none of the difficulties which lie in the way of its realization,—difficulties which exist in the very constitution of their own minds. While holding the ruling classes responsible for the poverty, want, and suffering which prevail, they forget that if they were in power they would be human too. The “Republics,” “Utopias,” and “Phalansteries” cannot be made real things for the same reason that Archimedes could not lift the world.

SECTION 27.—It is not to be expected that a writer of Rousseau's temperament shall be consistent. We have quoted him on the necessary relation of pain to pleasure. But in the same work he affirms the common optimistic notion that man is the cause of his own misery: “Le mal moral est incontestablement notre ouvrage, et le mal physique ne serait rien sans nos vices, qui nous l'ont rendre sensible.” “Homme, ne cherche plus l'auteur du mal; cet auteur c'est toi-même. Il n'existe point d'autre mal que celui que tu fais ou que tu souffres, et l'un, et l'autre te vient de toi.—(Emile, pp. 332–3.)

Another writer whom we have quoted on necessary evil, gives expression in the same work to the wildest utopianism. He announces his faith in the “perfectibility of man,” and expects marvelous results from science: “Disease will be extirpated;

the cause of decay will be removed; immortality will be invented. And then the earth being small mankind will migrate into space and will cross the airless saharas which separate planet from planet, and sun from sun. The earth will become a holy land which will be visited by pilgrims from all quarters of the universe. Finally, men will master the forces of nature; they will themselves become architects of systems, manufacturers of worlds. Man will then be perfect; he will be a creator; he will therefore be what the vulgar worship as a God."—(Martyrdom of Man, 514). All this is given with amplification; and it may be regarded as the "hyfalutin" of optimism. It really excels Charles Fourier's theory of the physical regeneration of earth, Von Prittwitz's transformation of earth into a universal park where people may migrate like birds to suit the season, and even Thomas Dick's idea of redeemed souls flying from world to world studying astronomy. But if Reade's be the extravagance of optimism, Hartley's is hardly less than the insanity of optimism in accepting the metaphysical delusion that "all individuals are actually and always infinitely happy."

We quote an American writer: "The capabilities of art and science for making of earth a heaven will not be known, until pervading the masses, every child in the land will be tremulous with sensibility, and love of order and beauty. With the energy of thought peculiar to practical science and the sensibility attending art, every home will be the blessed abode of peace and plenty, of love, order, and beauty, in which sadness and sorrow will be unknown, as all will be industrious and live in natural simplicity, hardly ever visited by sickness, want, and misery."—(Race Education, Samuel Royce, pp. 183, 184). This is a characteristic passage. There is a like flaw here with that in the quotation from Greg (section 24). "Hardly," and the words which follow, betray an intellectual misgiving as to the previous confident statement that "every home will be the blessed abode of peace and plenty, of love, order, and beauty, in which sadness and sorrow will be unknown." Emotional optimism may not wholly escape intellectual qualification.

SECTION 28.—Optimism as allied with progress and law had its origin during the last century, under the stimulus perhaps of commercial, industrial, social, and educational activities in western Europe. Having passed into literature, it became the common property of the intelligent, and through them it has permeated all classes, till scarcely any of us have escaped its subtile influence as an educational force for the moulding of opinion. Shaftesbury, Bolingbroke, Hutcheson, Godwin, Condorcet, were among its chief expositors. Pope set it to singing, and rendered it irresistible.

Shaftesbury: "Tis good which is predominant; and every corruptible and mortal nature by its mortality and corruption yields only to some better, and all in common to that *best and highest* nature, which is incorruptible and immortal."—(Characteristics, Vol. II, p. 216). "All is delightful, amiable, rejoicing, except with relation to *man* only, and his circumstances, which seem unequal. Here the calamity of ill arises; and hence the ruin of this goodly frame."—(p. 291). "That in an infinity of things, mutually relative, a mind which sees not infinitely, can see nothing fully; and must, therefore, frequently see that which is imperfect, which in itself is really perfect." The appearances of ill may be no real ill but good, and "all may be perfectly concurrent to one interest; the interest of that Universal One."—(p. 364).

Condorcet: It can hardly be regarded as paradoxical that Condorcet should have written his extremely optimistic views during one of the gloomiest periods of modern times. Robespierre and his party were in power, and the Reign of Terror had driven Condorcet into concealment to escape the bloody tribunal which had been set up in the name of liberty. But nothing daunted he had his revenge by writing a hopeful view of the future—*Tableau Historique des Progress de l'Esprit Humain*. The author believes that there are no natural bounds set to the improvement of the human faculties, and that the perfectibility of man is really unlimited. Education properly directed would correct the prevailing inequality of the faculties,

and work all kinds of miracles in bringing about equality among men. He dreams of a universal language, and a universal equality, including equal rights between the sexes. As with fanatical optimism generally, he charges the evils to be found in marriage to its regulation by law : — “Ce sont les préjugés de la superstition et ceux de l’orgueil, ce sont les systems hypocrites et tyranniques des législateurs, qui changent en poison funeste le plus sûr aliment de notre félicité, le sentiment consolateur de nos maux inevitables.”—Œuvres, Tome VI., 524). All of the *Fragment de l’Histoire de la Xe Epoque* assumes the possibility of converting human society into a paradise by making mankind rational ; and teaches the methods of bringing this about, chief of which is to remodel human nature during the tenderness of youth. Thus of teaching children : “C’est en leur inspirant l’habitude de transformer ce sentiment individuel de la compassion, en un sentiment général d’humanité, qu’on peut parvenir à rendre la philanthropie une affection vraiment universelle.”—(553). Generally, Condorcet regards the universal progress of reason as the cure for all the wrongs of life ; he expects all the passions to obey the injunctions of reason. In this way he gets rid of war, injustice, oppression, and every form of evil. He is in the habit of regarding evils which have grown out of the action of human nature as it is, as the consequence of bad institutions, forgetting that the institutions themselves are but the outgrowth of human nature acting as it must.

Godwin: True to the type of radical reformers, William Godwin, author of “*Enquiry Concerning Political Justice*,” is very often just in criticism, but generally wild in reconstruction and in anticipation. When he says that, “Legislation is in almost every country grossly the favorer of the rich against the poor,” he does not greatly overstate the case, nor yet when he adds : “The rich are encouraged to associate for the execution of the most partial and oppressive positive laws. Monopolies and patents are lavishly dispensed to such as are able to purchase them.”—(pp. 29, 40). It was quite true then ; it is quite true yet, as has been munificently and magnificently proved in our

own country during the last twenty years. But when our author looks forward to what is to be, he readily goes off into extravagance: "How rapid and sublime would be the advances of intellect, if all men were admitted into the field of knowledge? At present ninety-nine persons in a hundred are no more excited to any regular exercise of general and curious thought, than the brutes themselves. What would be the state of public mind in a nation where all were wise, all had laid aside the shackles of prejudice and implicit faith, all had adopted with fearless confidence the suggestions of truth, and the lethargy of the soul was dismissed forever?"—(p. 807). And still more in the same strain.

"The spirit of oppression, the spirit of servility, and the spirit of fraud, these are the immediate growth of the established system of property. These are alike hostile to intellectual and moral improvement. The other vices of envy, malice, and revenge are their inseparable companions. In a state of society where man lived in the midst of plenty, and where all shared alike the bounties of nature, these sentiments would inevitably expire. The narrow principle of selfishness would vanish. No man being obliged to guard his little store, or to provide with anxiety and pain for his restless wants, each would lose his own individual existence in the thought of the general good. No man would be an enemy to his neighbor, for they would have nothing for which to contend, and of consequence philanthropy would resume the empire which reason assigns her. Mind would be delivered from her perpetual anxiety about corporal support, and free to expatiate in the field of thought which is congenial to her. Each man would assist the inquiries of all."—(p. 810).

The author does not believe in co-operation, common labor, or meals in common, and is quite a stickler for individuality. He affirms that, "Sleep is one of the most conspicuous infirmities of the human frame," and believes it may be done away with.—(p. 868.) Eventually mankind will refuse to propagate and will become immortal on earth, "and men, therefore, to exist when

the earth shall refuse itself to a more extended population, will cease to propagate, for they will no longer have any motive, either of error or duty, to induce them. In addition to this they will perhaps be immortal. The whole will be a people of men and not of children. Generation will not succeed generation, nor truth have in a certain degree to recommence her career at the end of every thirty years. There will be no war, no crimes, no administration of justice, as it is called, and no government. These latter articles are at no great distance; and it is not impossible that some of the present race of men may live to see them accomplished. But besides this there will be no disease, no anguish, no melancholy, no resentment. Every man will seek with inevitable ardor the good of all."—(p. 872.) And thus he goes on with "this illustrious picture." Proper education, no accumulation of property, but perfect equality of possession, and a fine sense of justice are to bring about this millennium. The type of optimistic faith exemplified in the doctrine of Condorcet and Godwin is still that which, though it affords a noble incentive to endeavor, is almost sure to be coupled with fanaticism.

Pope: "All nature is but art, unknown to thee;
All chance direction which thou canst not see;
All discord, harmony not understood;
All partial evil, universal good;
And spite of pride, in erring reason's spite,
One truth is clear, *whatever is, is right.*"

Thus has optimism in its extreme form of perfect, or very nearly perfect bliss, either now, or to be in time to come, found lodgment in the minds of representative writers, sentimentalists, poets, theologians, spiritualists, socialists, even hard-headed thinkers and scientists. Such is the diversity of changes, which have been rung on this conception, that it has been difficult to find any principle to guide in the collocation of views given in this chapter. Fashions of opinions are not always correct; and this may not be. It seems to be rather the crude result of intellectual processes taking place under the pressure of optimistic

bias. Might not the subject be more judiciously treated under the methods of modern research, with results less extreme and more trustworthy?

CHAPTER V.

THE PROBLEM STATED.

SECTION 29.—Between the extremes of optimism and pessimism there is of course every variety of opinion concerning the relative weights of good and evil, and the ultimate extinction of evil through progress or providence. There are thinkers—we may imagine that they constitute a school—whose views we wish here to bring into notice. They are neither optimists nor pessimists and yet they are in a certain sense both. They are optimists in believing that the sum of enjoyment in life is greater than the sum of suffering; but they are pessimists in believing that evil is inherent in the constitution of things and can never be eradicated from existence. They believe that the most that progress can do at any future period of the world's career is to modify the character of both good and evil, improving the one and palliating the other, and thus increasing the preponderance of happiness over unhappiness among mankind. With these views the writer is in sympathy.

After Pessimism and Optimism would probably follow a chapter on Meliorism, but the material is not at hand. The formal and definite conception of evil as something which can be modified and softened but not eradicated or in any way completely overcome, is one which has not recommended itself to the modern mind till very recently. The doctrine of progress appears to have been in full vigor during the first half of this century; and

the obvious inference was that the movement of progression implies perfection, and would not cease till it had reached it. Many still so believe.

The protest against optimism assumes two forms, the one extreme, pessimistic, the other moderate, melioristic. When the study of this subject was commenced twenty years ago (1861) by the writer, he supposed that "all the world" were in one way or another optimists, except a very few eccentric people who were pessimists. The name meliorism had not been thought of, the idea had not crystalized. The reasoning would have been almost certain to be put in some such form as this: Evil is either curable or incurable; if it is curable we are optimists; if it is incurable, why, then, of course, pessimism must be true. We so like to have things one way or the other, decisive and incisive. But pessimism does not necessarily follow from the ineradicable nature of evil. Many evils which cannot be extirpated may be palliated, and suffering which cannot be escaped may be mitigated. And with this incentive to action, labor should be expended for what seems to be the best possible. This is the melioristic view.) This, too, would properly include all cases in which certain evils gather force with time; they should be met at every step, and their progress as much as possible retarded; for this is a form of palliation which it is beneficent to promote. Life is a continued battle; and only under opposition and difficulty does manhood attain its full strength; and in this way even those stubborn evils which can only be palliated or partially arrested in their course, are not without some redeeming influence in the economy of life.

Optimism and pessimism in their exclusive forms are extreme systems which embody both truth and error, as such systems nearly always do. The truth usually crystallizes into some intermediate form after having first passed through the extremes on either side. The mean, where in the end, it is usually found that the truth rests, is always the last in favor. This is true even in science as elsewhere, as the history of science abundantly proves; although the theoretical extremes are due rather to the

neglect than to the application of rigid scientific methods. But as shown by the history of discovery, this is the way the human mind has of ultimately finding out precisely where the truth is. In the case under consideration it is the function of correct methods to bring together the truth, which the extremes embody, into an integral system with its basis resting in the facts of science and history.

SECTION 30.—The summary of views given in the preceding chapter is, of course, intended to show reason for believing that unqualified optimism has entered largely into the faith and motives of men. Now, if such optimism be an extreme embodying cardinal error, it is less desirable than some other system with more truth and less error;—hence, the need of a new examination of the subject; hence, a use for this volume, if it prove equal to its opportunity. This may not be conclusive to the reader; all that is asked is that it may be accepted as conclusive with the writer. But while this volume has been in preparation a change has been going on in the minds of many concerning the nature of evil and its relations to life. The change seems to have been taking place silently and almost unperceived—as many another change has done before—the cause of it being “in the air,” and isolated minds becoming affected simultaneously. Of course, all this may be traced eventually to progress in the work and methods of science and education, and to changes in practical life. Only within a few years has it been thought necessary by unprejudiced students to assail the legion of optimistic spirits raised by the incantation of such words as Liberty, Equality, Fraternity. Under like conditions has the exigency of the times been revealed as well as met by efforts to obstruct the inroads of pessimism. And I will confess to some surprise on reading a recent statement in the *North American Review* (April, 1881), by an English writer, that the exultant optimism prevailing half a century since has quite disappeared from the utterances of accredited teachers, and a modified faith taken its place which recognizes man’s ability—not to root out the evil of the world, but merely to lessen it. This

does not come ostentatiously into the literature of the day, which is bound to be as rosy as possible; the evidence of the change is rather negative and subdued, the gradual subsidence of one tone, and the gradual adoption of another as quietly as possible; and consequently the change might be easily overlooked by contemporaries. The reviewer makes the change far greater than I should have taken it to be; but his estimate may be correct. I had long observed that some such view as this was not uncommon among practical men of the world, who think by spontaneity and work by profession, but who never write. Quite commonly such people's instincts of what affects life are more apt to be correct than the elaborately formed judgments of closet-thinkers and accredited public teachers.

SECTION 31.—The intermediate views on this subject will no doubt vary considerably, leaning with one toward optimism, with another toward pessimism. The following is given to assist in forming a definite conception of what this intermediate ground is, premising that the summary may have a slight pessimistic tinge: "This view of human life, a view which lies midway between optimism and pessimism, has been called, I believe, by G. H. Lewes, *meliorism* [Sully says the name was given by Mrs. Lewes]. It assumes that misery is, on the whole, the lot of mankind, but that the mass of suffering and discomfort at present existing is capable of being indefinitely reduced by human endeavor. Progress in this view of the situation consists in a continual encroachment of human effort upon the domain of evil. We now conceive the 'what might be,' not as a heaven of positive bliss, but as a little more relief from the inevitable pain of being."—(Mark Pattison, in *North American Review*, April, 1881).

Meliorists may put in their work with different views concerning the opposing force which most needs to be resisted. They may believe that optimism is strong by pre-occupancy and needs to be dislodged, or they may look upon pessimism as the young, vigorous, and aggressive power from which most is to be feared. On reading Mr. James Sully's work on this subject (*Pessimism*),

this view of its origin and execution is obviously suggested,—that the author had studied German pessimism both as to its plausibility as a philosophy and its proselytism as a practical movement, till he felt that it was a power of sufficient importance to be opposed. The leading purpose of the volume is to show that pessimism is not tenable. This is the author's bias, or rather, the idea which directed his effort. He really makes no formal argument against optimism; but in his discussion of pessimism, it turns out incidentally that good reasons must be recognized why optimism in its extreme form is not defensible. Hence, the author rejects both, and adopts meliorism. But while the work done in the interest of meliorism is, perhaps, most likely to be directed against pessimism, the present volume aims rather to fortify against optimism. It was conceived and has been written under the impression that English-speaking peoples are far more likely to go to extremes in the direction of optimism than in that of pessimism. The practical need appeared to be to show that the prevalent form of optimism concerning the incidental character of evil, and its gradual and certain elimination, is not warranted by science, history, or contemporary experience. And this concerns not only philosophy, but practical life as well. If it be true, it enters into the living questions of the day; and we have ventured in future chapters (Parts VI. and VII.) with greater misgivings than in any other parts of the work, briefly to discuss some of these questions.

→ SECTION 32.—The system of nature is a unit with all its parts interrelated, and if the inseparable connection of good and evil in sentient and moral existence is inherent in the system, there is something which corresponds to it in the purely physical world, and that something may be found in its simplest form in the primitive action of the cosmical forces. If there be truth in this view, we should be able, to some extent, after finding in the simplest forms of action the germ of harmony and discord, of good and evil, to trace it as it becomes more complicated in the course of its unfolding in the evolution of the world, first in physics, afterward in sentient life, and finally in the intellectual

and moral spheres of existence. The term "conflict" has been chosen to designate this general fact. In its primitive form it may be simple attraction and repulsion, which would afterwards, in the course of evolution, assume a multiplicity of forms with their accessories, which may be indicated by the terms alternation, contrast, antithesis, contrariety, duality, polarity, compensation, reflex action, action and reaction, circular motion, imperfect equilibrium, conflict of forces and laws, good and evil, enjoyment and suffering, pleasure and pain, happiness and misery, etc.

It will be the aim of this work to afford some elucidation of the law which involves the necessity of physical and moral discord. The ancient views of good and evil were at best but vague anticipations of the truth, while the modern are for the most part fragmentary and contradictory. No satisfactory explanation has been given of the difficulties which it is acknowledged are involved in the subject; and while there is disagreement as it regards the essential character and relations of good and evil, no adequate account has been given of the cause and origin of evil. If the subject admits of being modernized in scientific form, the attempt has not been successfully made. The following chapters may do something to fill this vacuum in systematic thought on a subject of acknowledged difficulty.

NOTE.—The word pleasure is one which will occur a great many times in the course of this volume; and since it is somewhat ambiguous, it is necessary to explain in what sense it may be used. To many it conveys the idea of sensual enjoyment even to criminal indulgence, and is rather the antithesis than the synonym of happiness. It has received this sense from the trick of puritanism to decry indiscriminately the enjoyments of sense, however temperate and legitimate. In this sense it would of course be a very different thing from happiness; nevertheless will it be here used to designate whatever is legitimately agreeable or happyfying. The intemperate indulgence of sense brings more pain than pleasure, while all happiness is in a sense pleasurable feeling. There is a pleasure even in martyrdom—the gratification of certain faculties. In a lower sense there is fascination in the hardships of the chase and of war. Men even love to dare the dangers of battle. The word pleasure will be largely used as the antithesis of pain, misery, suffering, unhappiness, and consequently as quite synonymous with happiness, enjoyment. It will therefore represent pleasurable states of the mind as well as of the body—pleasures of conscience as well as pleasures of sense. The con-

sciousness of doing good, of having discharged a duty involving repugnant labor, of having chosen in any contingency the wiser part, of having been true to the convictions of right even at great cost, and of having conscientiously used the opportunities of life,—all these bring pleasurable feeling; and in this sense pleasure or the pleasurable is what all are seeking, even when they renounce it;—and this is true of the ascetic as well as of the voluptuary, each according to his own mistaken notions of the greatest good in life. Pleasure is a thing not to be concerned about as an end. When the pursuit is too hot it usually eludes the pursuer. As friendships are best held by manly independence, so will pleasure not bear formal solicitation, but deigns companionship only on compliance with its laws.

PART SECOND.

CONSIDERATIONS FROM SCIENCE.

CHAPTER VI.

EXISTENCE.

SECTION 33.—Existence is the sum of all mysteries. Be the marvel at any point ever so great, it is only a fraction of the still greater marvel of existence. Within its sphere come all we think, feel, do, and are, and yet, of the essential nature of existence we know nothing and can know nothing.

Has existence had a beginning? The human mind is a blank in presence of the inquiry. There is no answer within the bounds of the knowable. We cannot master in any complete sense the conception of an eternity of existence past any more than we can master the conception of the creation of a universe out of nothing. We use the terms as we use notation many figures deep, only with a still less definite conception of their power. And since the mystery is inscrutable, the inquirer can well afford to pass it over for subjects which will yield a better return for the labor expended. Locke very wisely recommends that we "sit down in a quiet *ignorance* of those things which upon examination are found to be beyond the reach of our capacities." Still, from education and habit, rather than from necessary constitution, the mind inclines to find rest in the belief of a beginning; and since it cannot penetrate to the beginning of existence, it contents itself with the belief of mythical or philosophical doctrines concerning the origin or beginning of the present order of things. Theology proper is exclusive, and ad-

mits of no speculation which ignores the absolute fiat of creation. The great body of speculation by scientific men favors the nebular hypothesis, with more or less emendation,—the only system that approaches a rational explanation of the “becoming” of the present order of things. According to this view matter was already in existence in nebulous form, and passed to the evolution of systems of worlds by the continuous action of natural forces. “The beginning” here has reference to forms, and not to that something out of which forms are evolved.

SECTION 34.—What is that essential thing without which there could be no consciousness of existence? Is it the old dualism of matter and spirit, or the more modern dualism of matter and motion, the recent monism simply of motion, or something still more recondite; or is it mere consciousness without anything to correspond with it in the external world?

Since idealism, which does not admit the existence of an external cause of sensation, but finds all existence within the mind itself in the form of consciousness, has the support of famous names in philosophy, it might seem that the first step should be to determine whether there is validity in this doctrine. But to most readers as to myself, this would appear to be an idle inquiry; and there is already more than enough of literature on the subject. Our belief in external existence is an ultimate fact which hardly admits of discussion.

Realism may be regarded in this connection as taking two distinct forms: one is that of unthinking experience which takes the external world to be absolutely what it appears to our consciousness to be; the other is brought out by philosophical criticism, which proves that the external causes of sensation and the perception which follows, are not necessarily so related that the one is a copy of the other. It is shown that the external world may be, indeed must be, essentially different from what it appears to be in consciousness.

Persons who are little in the habit of critical introversion, are apt to think of matter as if they knew just what sort of thing it is. Their error consists in mistaking the subjective for the ob-

jective, the phenomenal for the absolute. Sound, for example, and color, have no existence outside of the sentient mind. They have external causes, but these causes are neither sound nor color, being in the one case simply waves of the atmosphere which strike on the tympanum of the ear, and in the other, waves of a more ethereal substance which strike on the retina of the eye. What we call heat is purely subjective, the external cause of it being motion, as Locke and Bacon stated long since, and as science has abundantly proved.

"Heat, light, actinism, are, then, not only principles existing independent of each other, but effects arising in bodies from the reception of motions in the ether, motions which differ from each other in their rapidity. Of those which the eye and ear take cognizance of, the most rapid impart to the mind the sensation of violet light, the slowest the sensation of red, and intermediate ones the intermediate optical tints. Colors, like light itself, are nothing existing exteriorly. They are simply mental interpretations of modes of motion in the ether, and in this they represent musical sounds, which exist only as interpretations by the mind of waves in the air."—(J. W. Draper, *Memoirs*, page 131-2).

The following is from another distinguished scientist: "On the hypothesis which appears to me to be the most convenient, sensation is a product of the sensiferous apparatus caused by certain modes of motion which are set up in it by impulses from without. The sensiferous apparatuses are, as it were, factories, all of which at the one end receive raw materials of a similar kind—namely, modes of motion—while at the other, each turns out a special product, the feeling which constitutes the kind of sensation characteristic of it." "In ultimate analysis, then, it appears that a sensation is the equivalent in terms of consciousness for a mode of motion of the matter of the sensorium. But, if inquiry is pushed a stage further, and the question is asked, 'what then do we know about matter and motion?' there is but one reply possible. All that we know about motion is that it is a name for certain changes in the relations of our visual,

tactile, and muscular sensations; and all that we know about matter is that it is the hypothetical substance of physical phenomena—the assumption of the existence of which is as pure a piece of metaphysical speculation as that of the substance of mind.”—(Huxley, in *Nineteenth Century*, 1879).

This is indeed a luminous statement from the physiologico-philosopher's point of view, though we may not quite understand the closing words. In a philosophical sense it may be apt, indeed, to say that “all we know about matter is that it is the hypothetical substance of physical phenomena;” but the assumption of the existence of matter appears to be instinctive and inevitable rather than “a piece of metaphysical speculation.” Animals, children, savages, and common people, as well as metaphysical philosophers, assume matter to exist, and act accordingly.

The trouble with the subject is that, in treating of it, we have to assume the existence of certain things of which, at the same time, we must disclaim any real knowledge. What do we know more of the essential nature of motion than of the essential nature of sound or heat, which we call in motion to explain? Thus, we say sound has an external cause in the form of atmospheric waves, and an instrument of value has been invented on this principle; but our perception of waves is itself as purely subjective as that of sound; and this is true of all our perceptions of force, motion, vibration, and the like. We cannot get out of ourselves, and when we seem to be treating of things without, we are really treating of what is within.

Every writer on this subject becomes entangled in this difficulty; and while Herbert Spencer, for example, shows that idealism cannot proceed a step without assuming the existence of what it denies, he does not himself wholly escape from the like absurdity.

SECTION 35.—More than two thousand years ago, it was very well understood in certain schools of Greek philosophy that perceptions of external objects cannot be copies of those objects. The Pyrrhonists and New Academicians recognized this fact,

and drew from it mistaken inferences against the certainty of knowledge. Few who have studied the subject in modern times have failed to see that our perceptions of external things are necessarily subjective, being, we assume, an effect upon self by a cause which is not self. Cudworth taught that, "we cannot be sure merely by the passions of sense, what the absolute nature of a corporeal object is without us, our perception being only relative to ourselves, our several organs and bodily crasis," "and so do not comprehend the nature of the thing as it is absolutely in itself, but only our own passion of it." Even Reid, the common-sense philosopher, says that, "no man can conceive any sensation to resemble any known (?) qualities of bodies." Stewart, who followed the common-sense philosophy of Reid, denied that smell, taste, and hearing afford to the mind any image of external objects, the sensations peculiar to them as well as that of color being purely subjective. Thomas Brown agreed with Stewart that sensations of color "need contain no notion of extension, but that even sensations appropriate to touch are as truly subjective, and that both suggest the extended and external object only through an inveterate association." Hamilton taught that, "our whole knowledge of mind and matter is relative—conditioned—relatively conditioned. Of things absolutely or in themselves—be they external, be they internal—we know nothing, or know them to be incognizable." Even Dr. Porter (from whose work on the Human Intellect the preceding examples, except the first, are taken) who teaches that we can know the unconditioned and absolute, favors the view "that the objects touched, and tasted, and smelled, and colored, etc., etc., which we call the material universe, are not realities, but only phenomena jointly produced by two unknowable realities which we call matter and embodied soul."

Mr. Herbert Spencer, in the second volume of his *Psychology*, has treated this subject very fully. While he rejects idealism he distinguishes between crude and transfigured realism. We quote: "The realism we are committed to is one which simply asserts objective existence as separate from, and independent of,

subjective existence. But it affirms neither that any one mode of this objective existence is in reality that which it seems, nor that the connections among its modes are objectively what they seem. Thus it stands widely distinguished from crude realism; and to mark the distinction it may properly be called transfigured realism."

What we have to do with wholly is phenomenon, and not absolute existence. We know nothing but phenomenon, and whatever else it may be, it cannot be divested of its subjective element; consequently, when we speak of matter, force, energy, motion, action, we mean to designate externalities which take shape in consciousness under the laws of our mental constitution. We are here limited by the conditions of perception, and there is no need of a struggle to pass this boundary, since phenomena come into consciousness under the order of uniform sequence, and are all that concern either life or philosophy.

This subject has received so much philosophical attention that it could not well be passed over here without some slight notice. But while its literature is immense, its difficulties are insuperable. But for all practical purposes,—indeed, for all philosophico-scientific purposes, it suffices to accept the deliverances of the healthy and universal consciousness. This recognizes an external world, and it does not matter for practical and scientific ends whether we regard this world in the light of crude realism or of transfigured realism, or as the ideal projection of the ego. After the philosopher has been grimly at work demolishing crude realism, or, after he has been happily engaged building up an idealistic world, he turns about and discourses of nature precisely as if crude realism were true. He has no alternative. Language itself has been constructed on the undoubted veracity of consciousness, and it has no meaning else. Language was not consciously originated by philosophers on a basis of scientific accuracy, but spontaneously by little-thinking people on a basis of crude conception and deceptive appearance. This language we have still to use. We all say the sun rises and sets, and nobody is misled; we know scientifically that it does no such

thing. Physicists no longer believe that electricity is a "fluid," but they are constantly speaking of electrical currents. In this sense Dr. McCosh is correct enough when he affirms that "what we perceive originally are things," and that "when we classify plants by their resemblances, we classify the plants and not impressions;" but philosophically, it is a child's weapon with which to meet the scepticism of Hume or the agnosticism of Huxley.

We have to do with our impressions of external things as they exist in consciousness, after having passed through the channels of the senses, and we very well understand one another when we speak of matter, force, or motion, though, like most words, their connotations are very different to different minds. We have to do with extension, with solidity, with motion, with succession, with color, with taste, with smell, with sound; and whatever these things may be under the test of the philosophies, they are yet *actual things relatively to us*, and it is only relatively that we have to do with them. We can only know phenomena, and that is all we need to know. Science deals only with crude realism because only this is *definite*. Transformed or reasoned realism has no distinctness of outline as an interpretation of the external world, and belongs necessarily to the domain of speculation, and not to that of science. Spencer observes that "language absolutely refuses to express the idealistic and sceptical hypotheses." It just as absolutely refuses to express the hypothesis of transfigured realism; and the hypothesis is not utilized by any of us who hold it. It is a sort of philosophical toy elaborately constructed, and laid carefully away, to be shown occasionally to guests, but never more to be used in the serious work of intellect.

Our notice of this subject may be closed with the lucid summing up which G. H. Lewes has given it in his History of Philosophy (p. 304): "Do we then side with the Academicians in proclaiming all human knowledge deceptive? No, to them as to the Pyrrhonists, we answer: You are quite right in affirming that man cannot transcend the sphere of his own consciousness, cannot penetrate the real essences of things, cannot know

causes, can only know phenomena. But this affirmation—though it crushes metaphysics—though it interdicts the inquiry into *noumena*, into essences and causes, as frivolous because futile—does not touch science. If all our knowledge is but a knowledge of phenomena, there can still be a science of phenomena adequate to all man's true wants. If sensation is but the effect of an external cause, we, who can never know that cause, know it in its relations to us, that is in its effects. These effects are as constant as their causes; and, consequently, there can be a science of effects. Such a science is that named positive science, the aim of which is to trace the co-existences and successions of phenomena; that is, to trace the relation of cause and effect throughout the universe submitted to our inspection."

SECTION 36.—For the sake of emphasis we may imagine one of the modern school making a profession of (philosophical) faith, positive and negative, as follows: "I do not know in any definite sense what matter in itself really is; it has no revelations of the mysteries of existence for me: I am not a materialist. The external world does not come to my consciousness or my reason as a something projected from the ego: I am no idealist. *Noumenon*, the *ding an sich*, the substratum of being, by whatever name known, is to me a sealed mystery: I am no metaphysician. The absolute is a name with no definite meaning, and must ever remain so: I am no transcendentalist. The fourth dimension of space and the finitude and infinitude of the universe are quite beyond my reach: I am no pangeometer. I know nothing of force as an entity distinct from the form it assumes in consciousness; I know nothing of entities of any kind: I am no schoolman. I know nothing of mind and soul apart from conscious experience: I am not a supernaturalist. Essences, spirits, and ghosts are shut up forever in the realm of the unknowable; I am not able to transcend the operations of my own mind: I am no mystic. I believe in the veracity of perception, not as the copy of things, but as the uniform interpreter of relations between the ego and non-ego: I am no scept-

tic. I believe in the relativity of all knowledge as a thing bound up with consciousness which there is no transcending. I know only phenomenon which is a compound of an external and an internal—or something which is not subjective and a something which is. It is with consciousness we have to deal; and beyond what comes to the consciousness through the senses as the basis of experience and of all thinking and knowing, I am absolutely in the dark—as all are, not excepting mystics and holy men, whatever light they imagine shines about them. I am by open confession what they are by the necessity which binds us all. Truth is the correct interpretation of the phenomena of life and nature; and I believe there is truth in the old as well as in the new; and that the best possible is to be had, not by cutting away from the past, but by its gradual transformation into the present. I believe in the value of systematic knowledge, and in the methods which have led through conflict to such knowledge. I believe in the order of Nature, in the science which interprets that order, and in the common sense which duly recognizes it in practical life; and these are the living, rational trinity of Faith, Thought, and Works."

CHAPTER VII.

THE UNIT OF PHYSICAL EXISTENCE.

SECTION 37.—Between the mind and something else through the medium of the senses, an external world takes form within consciousness. Acknowledging the limitations of language, in what phraseology, or form of thought, is it most convenient to render our conception of this objective existence? It is usually spoken of as matter in various forms with various properties,

and with various states of activity and rest. This method of regarding external things is so woven into all thought, that it is not possible to lay it aside if we would, though accuracy may require that the use of it in philosophical connections be made under protest, and with some qualification. This prevailing use of the word matter, quite commonly connotes that it is itself a dead thing, and manifests action only as it is acted upon. It is said to be acted on by the forces, or by an independent spiritual power; and matter and force, or dead matter and some living power are very generally regarded as distinct things. In this sense force hardly escapes the imputation of being a mythical something, a sort of metaphysical entity, which has a part to play only in the absence of more distinct conceptions. This may only show how primitive in philosophy we still are. The philosophers of China have no place in their system for such a thing as "dead matter." With them matter is not distinct from force, nor force from matter. The two are bound together as one, and it is inconceivable to them that one could have an existence without the other. They are the two poles of the same thing. "The relation of force to matter is essential, and the terms before and after are so far inapplicable to it; though to the principle of force is given the precedence. All exists through the primal force, whose union with form and quantity is only possible through the primal matter, while of itself without this, it could neither strive, nor work, nor purpose."—(Chu-hi, Philosophy of Nature—Johnson's Oriental Religions, China, p. 928).

This resembles the modern view which is probably quite common among scientific men, that force is inherent in matter constituting an essential part of it, without which it would not be matter. This is a simpler view, involving less of arbitrary theory and possessing greater logical aptness, than the dualistic. We know nothing of matter but by the action of the forces which are reputed to be in some form associated with it. "We know matter only by its forces," says Faraday. And J. B. Stallo, who disclaims faith in the fundamental concepts of modern physics, declares, "that mass—or, to use the ordinary term *inert* matter,

or *matter per se*—can not be an object of sensible experience. Things are objects of sensible experience only by virtue of their action and reaction. As Leibnitz said, ‘Whatever does not act does not exist.’ Again: “Mass reveals its presence, or evinces its reality only by its action, its balanced or unbalanced force, its tension or motion.”—(Modern Physics, 149, 161). Professor Macomber observes: “It is noteworthy that matter and force are always found associated. In fact, we are ignorant of force except as it affects matter. This suggests the query whether there be such a thing as pure force. Since matter and force are never separated, may they not, after all be identical? Not a few philosophers have seriously urged this doctrine. By simply assuming each molecule of matter to be a centre of force, we can account for all its properties. Regarded in this light, matter and force are one and the same.”—(Matter and Force, p. 58). Prof. Cooke: “We may with Newton, regard them [atoms] as infinitely small, that is as mere points, or, as Boscovich called them, variable centres of attractive and repulsive forces. . . . According to this view, matter is purely a manifestation of force.”—(Chemical Physics, p. 110). If matter is purely a manifestation of force,” if “we know matter only by its forces,” then the dogma of “dead matter”—the idea of matter in the old “materialistic” sense—is an assumption and a prejudice which modern research is dissipating.

We only know of objective existence by its action on mind through the senses. It is not possible to conceive of anything in the external world which is destitute of every form of action upon ourselves. “All that we know about matter relates to the series of phenomena in which energy is transferred from one portion of matter to another, till in some part of the series our bodies are affected, and we become conscious of a sensation.” (Matter and Motion, J. Clerk Maxwell, p. 164.)

The most permanent forms of matter are, under the necessities and limitations of perception, but the imperfect equilibrium of forces. The simplest element of knowledge, our consciousness of resistance, arises from an external force opposed to our

own. What comes within the range of cognition, is the *action* of things—the play of some force. It is some power that acts, but we know nothing of that power except by its action. “In strict mathematical language the word force is used to signify the supposed cause of the tendency which a material body is found to have towards alteration in its state of rest or motion. It is indifferent whether we speak of this observed tendency ~~or~~ or of its immediate cause, since the cause is simply inferred from the effect, and has no other evidence to support it.”—(Electricity and Magnetism, Maxwell, p. 146.)

It is the work of science in its ultimate function to determine the character and relations of actions simply. What comes into consciousness as lying back of these actions is the result of inference readily made ; and we easily conceive of the universe as a system of active powers. The term *force* occupies a position between those of *power* and *action*. In the plural it may be used to designate powers, but it has a more obvious reference to action. It is easier to conceive of a power not in action than so to conceive of a force. To speak of a living or active force may lend emphasis, but it verges on tautology. Latent, dormant, potential forces, it is true, are spoken of, but a force that is latent, dormant, or potential, is a power of which we know nothing while in that state. We only know of it from its antecedents or its consequents in the form of action. A power may be latent or inactive, but a force that is so, is no force at all—it is practically non-existent. “Force is wholly expended in the *action* it produces ;” and “the measure of a force is the quantity of motion which it produces in a unit of time.”—(Elements Natural Philosophy, Tait & Thomson, 54, 55). Force also implies something more than action ; it might be defined as power in action, thus combining the inference of cause with the cognition of effect. “Force may be of divers kinds, as pressure, or gravity, or friction, or any of the attractive or repulsive actions of electricity, magnetism, etc.”—(Tait & Thomson). Energy is a kindred term but has a reference peculiarly its own to the continuous supply of the means of action. The massive

bones and firm, bellying muscles of the athlete show that he has *power* though he be sleeping. When aroused into *action* he manifests *force*, and sustains it with *energy*. From the *actions* we observe in nature, and the *energy* with which they are carried on, we measure the intensity of the forces and define their character. Concerning the *power* that lies back of these, we may guess, but can know absolutely nothing. However, we are not to expect too much of such distinctions; and I am well aware that in this attempt I have stepped upon unsafe ground. Power, force, energy are often interchangeable terms, so nearly are they allied in meaning, showing that in regard to the phenomena to which they relate, there has been no uniform conception of clear-cut and well defined ideas. Even the masters differ in their use of these terms.

SECTION 38.—Speculations concerning the simplest element of force in nature have not brought out satisfactory results, as we should very naturally expect from the inherent obscurity of the subject, which barely lies within the region of the knowable, and which probably does still lie within the region of the unknown. The theory of Boscovich has held a prominent place in speculation of this kind, and has received a sort of theoretical endorsement by certain authorities in science of the highest character. His theory is that the point as the center of force is the simplest conceivable form of physical existence. Boscovich's atom is not a material and extended something in which force resides; it is simply a point, a center of force or power. Faraday, who was not, however, a mathematician, adopted Boscovich's theory, and upon it builds his magnificent scheme of polarity, chemical affinity, the transmutation of forces, etc.

Joseph Bayma, professor of philosophy, Stonyhurst College, has elaborated this subject with apparent great care in his work on Molecular Mechanics. He appears to establish it as a mathematical necessity that force can only act from point to point. "Primitive substance cannot be materially extended." "In a material element the matter is a point, from which the action of the element is directed towards other points in space,

and to which the actions of other material points in space are directed" (page 31). On this view, "the matter" is the force center, as he elsewhere explains more fully. We can only state the author's leading proposition without the reasoning with which he supports it.

Thomas Rawson Birks, M. D., who has investigated the same subject, has recognized the same mathematical necessity in the simplest element of existence. He says: "Every particle is either a mathematical point or else contains such a point, as the true center from which the attraction proceeds" (page 7). "The simplest view of matter, derived at once from the law of gravitation, is that it consists of monads, or movable centers of force, unextended, but in definite position, which attract each other with a force varying inversely as the squares of the distance between the centers. This conception of points that are centers of force, results plainly and unavoidably from the nature of the law of gravitation. Any further conception of the constitution of matter is an unproved addition" (page 9).

Dr. Christian Wiener, in his work, *Die Grundzüge der Weltordnung*, while maintaining that there is nothing in the universe but matter and the forces, the forces residing within matter, which is extended and impenetrable substance (*Wesen*); yet in discussing the general properties of matter, he "yields to the logical necessity of recognizing infinitely small particles of matter or points of matter" (page 8). According to J. Clerk Maxwell, a high authority on this subject, "the diagram of a material particle is of course a mathematical point, which has no configuration."—(*Matter and Motion*, page 14). M. Couchy defines atoms as "material points without extension."

SECTION 39.—The latest view taken by leading mathematicians and physicists of the ultimate unit of matter as known to us, is that it is a vortex ring in a universal fluid. This fluid has only the properties of invariable density (incompressibility), inertia, and perfect mobility—(Maxwell). The vortex ring in such a fluid is permanent as to volume and strength, and permanent as to quality whether knotted on itself or linked with other rings; and is

capable of infinite changes of form, and may vibrate at different periods as we know molecules do. An advantage of the ring over the solid atom is that it vibrates. "But according to Thomson, though the primitive fluid is 'the only true matter,' yet that which we call matter is not the primitive fluid itself, but a mode of motion of that primitive fluid. It is the mode of motion which constitutes the vortex rings, and which furnishes us with examples of that permanence and continuity of existence which we are accustomed to attribute to matter itself. The primitive fluid, the only true matter, entirely eludes our perceptions, when it is not endued with the mode of motion which converts certain portions of it into vortex rings, and thus renders it molecular."—(*Encyclopædia Britannica*, Art. Atoms, J. C. Maxwell). Professor Tait (*Recent Advances*, page 294), observes: "This property of rotation (vortex rings) may be the basis of all that appeals to our senses as matter."

This may, indeed, appear to be a speculation more curious than valuable. It resolves matter into motion, that is, matter as known to the senses. The cessation of this motion would, therefore, be to us the annihilation of matter. But whether or not the vortex ring be the particular mode of motion of this primitive fluid which renders the universe sensible, there is still a plausibility in the general elements of the view concerning the primitive fluid itself and the necessity of motion therein to give existence to sensible forms of matter, that commends it to consideration on a subject which is at once interesting and obscure. Two of the greatest names in modern research, Helmholtz and Thomson, are associated in the mathematical and experimental elucidation of the vortex ring as the unit of matter; two more belonging to the same class, Maxwell and Tait, have appeared in the statement of the theory herein given; and on a subject at once so curious, so difficult, and so instructive, we append brief statements of two others.

C. A. Wurtz observes:

"The circle is their position of equilibrium, and when their form is altered, they oscillate around this position, and finally resume the circular form. But if we try to cut them they recede before the knife, or bend around it, without allowing

themselves to be injured. They give, therefore, a representation of something which would be indivisible. And when two rings meet each other, they behave like two solid elastic bodies; after the impact they vibrate energetically." Two rings may pass through each other alternately. "But through all the changes of form and velocity, each preserves its own individuality, and these two circular masses of smoke move through the air as if they were something perfectly distinct and independent."—(Atomic Theory, pp. 327-8). He adds: "Helmholtz, therefore, has discovered the fundamental properties of matter in vortex motion, and Sir William Thomson has stated, 'This perfect medium and these vortex rings which move through it, represent the universe'. A fluid fills all space, and what we call matter are portions of this fluid which are animated with vortex motion. There are innumerable legions of very small fractions, or portions, but each of these portions is perfectly limited, distinct from the entire mass, and distinct from all others, not only in its substance, but in its mass and its mode of motion—qualities which it will preserve forever. These portions are atoms. In the perfect medium which contains them all, none of them can change or disappear, none of them can be formed spontaneously. Everywhere atoms of the same kind are constituted after the same fashion, and are endowed with the same properties" (pp. 328-9). An American, Professor Macomber, thinks favorably of Thomson's suggestion "that what we call matter may be nothing but rotating portions of a perfect fluid which occupies all space. In other words, an atom is simply vortex motion. Every so-called atom is a vortex ring."—(Matter and Force, p. 20).

But however much the conception of force or of motion may invade the province of matter, the term "matter" is still as necessary and as useful as ever. If, for example, matter be vortex motion in a perfect fluid, then is vortex motion in a perfect fluid precisely what we *know* by the name of matter, and the name is perfectly legitimate. And it is to be remembered that matter we know phenomenally as direct as we know any of the phenomena with which we have to deal in life, while vortex motion in a perfect fluid as constituting matter is at a much farther remove from the immediate field of human knowledge. It is entirely consistent, while entertaining these theories of matter, to use the term matter in the sense current in every day life and in science proper.

SECTION 40.—The forces which we regard as constituting essentially the universe, have not played any simple role of movement in brief season, or in small circle of recurring activity: they appear rather to have worked out, and to be still working out, a magnificent destiny. They are passing in phenomenal results from

one stage to another, mainly ascending, sometimes descending; the whole becoming constantly more complicated; and we give to the movement the name of evolution. But this is only one section of the career which we see. It points back to a simpler state of things, and forward to a maximum of organized complexity, when a general descending movement may begin in our world, not to end till it again reaches the simple and disorganized, in the original, or in some modified, form.

It comes within the scope of our purpose and plan to inquire in the first place, what is the simplest form of activity in the economy of nature, of which we can conceive, or of which we have any definite knowledge? This simplest form of the play of forces must be our point of beginning as the first term in the series of development—as the initiative of the magnificent succession of results in all the activities of nature and life.

CHAPTER VIII.

THE PRIMARY FORCES.

SECTION 41.—What are the simplest known properties of matter—those properties without which it would not be matter? Is it attraction? Is it repulsion? Or is it something simpler still? The problem of finding one original property of matter from which all other properties have been derived, and to which they may all be traced, has not been overlooked by students of nature. The property so honored is sometimes that of attraction. This view may have arisen from the habit of attending to the construction of bodies rather than to their dissolution. A writer who is not a physicist, and who appears only to see one side, thus states the case: “It is a very important generalization that *all primary forces are attractive*; there is no such thing in nature as a primary

repulsive force. For this, as for every other physical law, no *cause* can be assigned except the Divine will. But its *purpose* is obvious. The universe is held together by attractive forces; and if, as I believe, the nebular, or, as I prefer to call it, the condensation theory of world-formation is true, the universe has been formed by the action of attractive forces. Repulsive forces, on the contrary, it is obvious, could neither form a world nor hold it together."—(J. J. Murphy, *Habit and Intelligence*, Vol. I., p. 43). It seems never to have occurred to the author to think out how attractive forces acting unresisted could form a world. If it be true that the worlds were formed through the loss of repulsion, and the relative gain of attraction, that does not by any means decide the question of primary force against repulsion. Its great prevalence in an earlier condition of our system proves it to be primitive, and indicates that it is a primary force.

No doubt the prejudice in favor of the attractive forces as ruling and primary has grown up in the common mind from the fact that, in the current manifestations of the natural forces, attraction seems greatly to predominate. But this has not always been so. On the nebular hypothesis there was a time when repulsion was immensely greater than at present, and when it could hardly be contemplated as a derivative and secondary property of matter. We may allow that repulsion was at its maximum when the volume of the nebula was greatest. By the loss of heat this volume would contract under the influence of gravitation; but attraction would lose nothing of its original power, since the mass of the nebula would be the same whatever its bulk. But from that time till this, repulsion within our system has been becoming absolutely less through the radiation of heat, and at the same time relatively weaker in proportion to attraction. Now, if this repulsion passed out of existence or was transformed into attraction, then might there be some ground for a case against it as a primary force; but though out of our system, it is still somewhere, maintaining strictly its integrity as a repulsive energy. It is primary.

Even now, how much of a world should we have if there were

no repulsive energies operative within it? They are everywhere present, and attraction would play a sorry part without them. There is repulsion among the atoms even of the solidest substances, more in the liquids, in the gases still more. There can be no chemical action without the presence of that kind of atomic behavior which constitutes repulsion; without it no physiological function, no life. However negative in some respects it may seem, its presence is absolutely indispensable to phenomena.

SECTION 42.—But even if attraction in its many forms predominate in current phenomena, this is no evidence that it is a primary, and repulsion a derivative, force. It is difficult to conceive how attraction as the primary, could be changed into repulsion as the secondary. Indeed, it is easier to conceive how repulsion may change into attraction, or how apparent attraction may be the product of repulsion. Physicists have put forth theories upon which, if true, repulsion is the original, and gravitation a derivative force. Newton was by no means satisfied that gravitation was an inherent property of matter. At one time he advanced the theory of an interplanetary medium, very rare within the planetary bodies, but becoming denser and denser with the distance from them. This would cause among these bodies a phenomenon equivalent to gravitation, "every body endeavoring to go from the denser parts of the medium toward the rarer." And Dr. Young thus speaks of this theory: "The effects of gravitation might be produced by a medium thus constituted, if its particles were repelled by all material substances with a force decreasing like other repulsive forces, simply as the distances increase. Its density would then be everywhere such as to produce the appearance of an attraction varying like that of gravitation. Such an ethereal medium would therefore have the advantage of simplicity in the original law of its action, since the repulsive force which is known to belong to all matter would be sufficient, when thus modified, to account for the principal phenomena of attraction."

Of the same import is the following from J. S. Stewart Glen-

Stewart

nie: "A mechanical force, or the cause of a mechanical motion, we know to be in general the condition of a difference of pressure." "Hence it appears that if a general mechanical theory is possible, the ultimate property of matter must be conceived to be a mutual repulsion of its parts, and the indubitable Newtonian law of universal attraction be deduced herefrom, under the actual conditions of the world." "But it must be understood that the above proposition is given rather to show that as an actual law, universal attraction may be deduced from the theoretical conception of universal repulsion, than with any pretension to its being the best attainable form of an explanation of the law."

Among the attempts to account for gravitation by repulsion, that of Le Sage has attracted most attention, having gained a prominence in its way as Boscovich's atom and Thomson's vortex ring have in theirs. It is favorably mentioned by many great physicists, among them Tait and Maxwell. It accounts for gravitation by supposing a repulsive ether whose particles moving in every possible direction would be intercepted by bodies in space. The action of this force on such bodies would drive them toward one another precisely as they are supposed to be drawn by attraction. They would move toward the vacuum which their own mutual interception of the flying particles would create. A kindred theory is conceived by Professor Walling, of Lafayette college. He attempts to account for the chemical and physical behavior of matter by supposing that force is independent of matter, but acts upon it in infinite lines moving in every possible direction. According to these views, gravity and gravitation are resolved into a force which is essentially repulsive, for Le Sage's corpuscles and Walling's infinite lines of force moving in every possible direction form a perfect system of antagonistic action, and correspond perfectly with the physicist's conception of the expansivity, elasticity, or repulsion, of gases.

James Croll, the physicist and mathematician, states his view as follows: "Gravity in all probability is of the nature of an

impact or a pressure. Some of our most eminent physicists state that the force of gravity must either result from impact of ultramundane corpuscles, in some respects analogous to that of the particles of a gas (which has been found to be capable of accounting for gaseous pressure), or it must result from difference of pressure in a substance continuously filling space, except where matter displaces it. That gravity is a force of the nature of pressure is, I think, beyond all doubt; but that this pressure results from the impact of corpuscles, or from difference of pressure in a substance filling space, is purely hypothetical. Why not call it a force, without calling in the aid of corpuscles or a medium filling space?" This view and Professor Walling's are essentially the same.

SECTION 43.—But it is doubtful if the supposition of a single primitive force from which attraction, gravitation, and all others are derived, does really compensate in simplicity for the theoretical difficulties it involves. It has not the merit of being simple. Boscovich supposed both attraction and repulsion to belong to the original power-point, the one changing into the other according to the relation of the axis and the curve of force; but the scheme is condemned by its obscurity and complexity. Whatever the supposition to begin with, whether vibrations, waves, flying corpuscles, lines of force, elastic ether, pressure, impact, attraction and repulsion immediately supervene as a necessary part of the problem. These must be primarily accounted for. Possibly we should gain in simplicity and clearness by the admission, to begin with, of two primary and antagonistic forces in nature.

Bayma, from whom we have already quoted (section 38), believes it to be demonstrable that attraction and repulsion are not only the primary, but indeed the only properties of matter. He begins with points which are either wholly attractive or wholly repulsive, and with these original centers of force he proceeds to build up all the known forms of inorganic matter. He says: "No phenomenon has been observed anywhere in material things, which cannot proceed from the known powers of attraction and

repulsion; nay, it is positively certain that all phenomena proceed from these same powers. For each material point, when acted on, can only change its place; and therefore, the effect of the action of matter upon matter is only local motion, one element approaching to, or retiring from the other. And this is precisely what attractive and repulsive powers are especially competent to do.”—(Molecular Mechanics, p. 46).

According to this philosopher, the *power* is the entity, or real thing that exists; what he calls *matter* is simply the power-center. “The matter is a point in space;” and this point is surrounded by an indefinite sphere of power which decreases in inverse ratio to the square of the distance. The point is not the source or generator of this sphere of power, but exists simply by virtue of it as its center. In maintaining that these power-centers, or “simple elements” are either wholly attractive or wholly repulsive, he differs from Boscovich, who regards attraction and repulsion as possible forces of the same point. Out of the “simple elements,” both attractive and repulsive, Bayma constructs his molecules, which possess extension, and “imply volume.” These molecules being composed of elements of opposite forces may be repulsive at certain distances and attractive at others. The definition of a molecule, as for example, of hydrogen, is given in full as follows: “A molecule is a system of simple elements, or material points, constituted by a centre, a number of regular concentric polyhedric nuclei, and a regular polyhedric repulsive envelope, all indissolubly bound with one another by dynamical ties, and subject to a kind of palpitating motion by which they constantly contract and dilate with a surprising rapidity” (p. 7).

The whole scheme is worked out with an imposing array of algebraic formulæ. The author's positions may not be impregnable, especially that which assumes the exclusively attractive nature of the ether which fills the inter-planetary spaces. But as abstruse as the subject is, and as abstract as this treatment of it is, it is nevertheless throughout suggestive; and it is here presented as one of the simplest views of the subject, and

one which brings out clearly the logical need of regarding attraction and repulsion as necessary and original functions of material existence.

Birks, who, as we have seen (section 38), takes the same general view of matter with Bayma, has wrought out quite a similar theory of its ultimate constitution and ultimate properties. Matter, according to his theory, is constituted of points of attraction which obey the Newtonian law of inverse squares. But attraction of itself does not account for cohesion, which he maintains is due to the pressure of ether as the embodiment of repulsive force in nature. He thus starts with the two forces ; the one of matter, attraction ; the other of ether, repulsion ; and with them he proceeds to account for all the physical and chemical properties of bodies (Matter and Ether).

An earlier theory than those of Bayma and Birks is that of Professor Norton, of Harvard. According to this theory matter has three forms : First, that of ordinary or gross matter ; secondly, an electric ether which is attracted by common matter, but whose atoms repel one another ; thirdly, a luminiferous, or universal ether which pervades all space, is self-repulsive, but is attracted by ordinary matter. His conception of a molecule is that it consists of an atom of ponderable matter surrounded by atmospheres of these two forms of ether. He says : "The conception here formed of a molecule involves the idea of the operation of the two forces of attraction and repulsion : a force of attraction is exerted by the atom upon each of the two atmospheres surrounding it ; and a force of mutual repulsion between the atoms of each atmosphere. These we regard as the *primary forces* of nature, from which all known forces are derived." Again : "All the forces in nature are traceable to two primary forces, viz., attraction and repulsion."—(Stated by Bayma from Silliman's Journal).

Original antagonism in the constitution of things is recommended to the metaphysical, as well as to the physico-mathematical, mind, in its attempt to reach the primary forces of physical existence. This is shown by the elaborate system of

cosmology by S. P. Hickok, who makes great account of the "insight of reason" to penetrate the order of nature. A system of rational cosmology which has been "evolved from the depths of consciousness" by a mind untrained in physical science, would not be likely to receive much attention from trained physicists; but it is referred to here for the general coincidence in its points with those which are in favor with the profoundest students of physical science. This theorist accounts not only for the dissolution of physical forms, but also for their construction, by the play of antagonistic forces which he calls antagonistic and diremptive. This combining agency is an antagonistic force, without which matter could not exist. "But our thought-conception of a space-filling force as the true substantial matter involves the full conception of both statics and dynamics; counteraction in equilibrium must stand self-fixed. It is a force holding itself in its place." The author's idea of the original antagonism which forms the space-filling molecule and atom is that of two equal and counter pushes or pulsions toward a common point. It is not the pull of attraction from all sides that combines, but the pulsion or pressure from opposite directions. His diremptive force is the precise opposite of this, being that which pushes asunder. The "antagonistic" is that "which works from opposite sides upon itself;" the "diremptive" is that "which outworks from itself on each side of the point of divellant action." With these two forms of "activity," which are the opposite of each other, and each of which is within itself an opposite tendency, he constructs his system of "rational cosmology." He builds up the universe out of counter forces. —(Rational Cosmology).

G. H. Lewes, a general as well as scientific student, clearly states the view we entertain concerning the necessity of opposing forces in nature: "Beside the unity of force we must accept the diversity of opposing forces. Physics could not stir a step without its discrete atoms and opposing forces. The atoms are infinitesimal masses [or forms of motion]; both are discrete. A

single force could have no resultant, and produce no change.”—(Problems of Life and Mind, Third Series).

Kant could not conceive of the existence of matter apart from the two properties of attraction and repulsion. But with these properties in hand he proceeded to build up a scheme of the universe, afterwards independently worked out by Laplace, —the nebular hypothesis.

The following is a somewhat technical statement of the theoretical necessity of antagonizing tensions in matter: “It may be well to affirm with some positiveness that without the ceaseless co-operation of two antagonizing, or reciprocating statical tensions, a mechanical theory of heat is rationally impossible. Matter possessing only inertia and motion (whose product is momentum) would speedily arrive at a state of stable and inert equilibrium, without having ever exhibited a single phenomenon of force, and without the possibility of any dynamic potential.

. . . . All gases would, under the operation of the first law of motion, tend to infinite and equable diffusion; and liquids and solids would quickly follow in their wake. Heat, whether considered as a vibration or a revolution (or preferable, as both a rectilinear and an orbital movement), could of course have no existence, since there could be neither recoil nor constraining bond; and the very first step toward an oscillation would also be the last one. Even the principle itself of ‘conservation of force’ is absolutely dependent on the existence of primordial static potentiality.”—(William B. Taylor.) According to the doctrine of conservation, energy is a constant quantity which changes form without loss or gain. This obviously suggests that the universe is a system of balancing forces—a universal strain in opposite directions, with the lines of stress constantly changing. This strain or compensating tendency is clearly necessary to maintain the integrity of the correlation and conservation of energy.

The author last quoted does not believe that any attempt to explain gravitation has been successful. This universal attraction is itself a function of nature so primal that the human mind

has not yet succeeded in resolving it into simpler known elements. A similar view is taken by J. Clerk Maxwell. In his article on Attraction, in the new edition of the *Encyclopædia Britannica*, he instances three hypotheses to account for gravitation: 1.—The corpuscular theory of Le Sage. 2.—Robert Hooke's theory of waves in a medium; Professor Walling having presented a modification of this theory, and Professor Challis having improved upon it by his suggestion concerning the "effect of waves of condensation and rarefaction in an elastic fluid on bodies immersed in the fluid." 3.—Sir William Thomson's view, showing how attraction and repulsion might take place between bodies by the emission or absorption of an incompressible fluid which fills all space. But he regards none of these theories as satisfactory; they add nothing to our knowledge of the real forces of nature; and we gain in simplicity by regarding attraction and repulsion as ultimate facts which admit of no explanation.

SECTION 44.—If attraction and repulsion, as these philosophers and students of nature think, are to be regarded as properly the primary forces of matter, we should no doubt be authorized to carry them back to the beginning and install them as the primitive forces of phenomenal existence. If these appear to discerning minds as the leading or only forces in nature when its phenomena are so diversified as at present, still more obviously would they appear as such in the nebulous form of the worlds. What precisely were the active forces of matter in the state of diffusion such as the nebular hypothesis supposes, we are not able perhaps fully to say. We can only judge of such a thing by what we may know from our own experience of matter in the highest known degree of diffusion. What were not there even, we do not positively know. There might have been discord, but there was no pain; there might have been harmony, but there was no pleasure. We should expect no manifestation of individualized mind, no animal or vegetable life, no sensibility, no crystallization, no cohesion of any kind, no chemical union, but only atomic dissociation.

On the other hand, we should expect the presence of gravitation, every atom attracting every other atom, and the entire mass drawn toward the common centre. The extreme tenuity and diffusion supposed involves the presence of heat having an intensity beyond anything within our experience. The prevalence of such heat implies other things. There was that condition of matter which the eye interprets as light—the nebulæ are self-luminous. There was motion—heat is motion, and the intenser the heat the greater the motion. As an inevitable accompaniment of the heat there were expansion and elasticity; and these imply repulsion. The heat-motion, the expansion and elasticity, are best summed up in the idea of repulsion. Besides the motion of particles there was no doubt the motion of masses, such as is now witnessed on a greatly reduced scale in the sun. The phenomena of nebulous existence are divided between the action of two antagonistic forces: *Repulsion*, which sustains the diffusion of the mass, and which would send its volume immensely further into space, but for *attraction*, which binds the mass together, and which, but for repulsion, would draw it into a compact mass at the centre. Nay, we cannot say what would be the condition of matter without repulsion; possibly, it is necessary to its existence. In the most primitive form in which we can conceive of cosmical existence, we find the antagonistic powers of attraction and repulsion in possession of the entire field of operations. Thus we are met at the very threshold of our inquiry with the conflict of opposing powers. We are not able to conceive of this original seed-plot of worlds apart from the strife of forces. There is conflict in this germ of life to come; and conflict may be necessary to existence itself.

The nearest approach that can be made to the conception of a unitary primal force, is to regard it as dual in character, involving the perpetual union of counter forces. Something like this is the view of the geometer, G. Lamé, who believes that while “the function of elasticity [repulsion] in nature is at least as important as of universal gravitation,” “gravitation and elasticity should be considered as effects of the same cause, which cor-

relate or connect all the material parts of the universe." Perhaps we might regard attraction and repulsion as Plato regarded pleasure and pain, as "united from one head."

SECTION 45.—In the nebulous mass of which worlds were born, certain initial changes took place. These were dependent solely on the mutual action of the two opposing forces, the attractive and repulsive. The sum of repulsion in the system would suffer loss by the radiation of heat, and attraction would draw the attenuated mass more closely together. This loss of repulsive energy would be in a sense, the cause of whatever changes might result from attraction. As the sum of attractive energy would not diminish, it would constantly gain in relative value over that of repulsion. Accompanying this, many other changes would be successively inaugurated; but since this part of our subject is so purely speculative, we shall pass on to that stage when planets had been evolved and were on their journeys round the sun. As the motion of masses is convertible into heat, all planetary motion may be regarded as the equivalent of heat. The tangential motion of the masses of planets keeps them from falling into the sun, by antagonizing the action of gravitation. This tangential motion is the equivalent of heat or atomic motion; but heat is a form of repulsion or inseparably bound up with it; and repulsion antagonizes attraction. In the present status of the solar system, the tangential motion of the planets antagonizes attraction, and keeps the planetary masses away from the center of the system; but if the planets should stop on their axes and in their orbits and fall into the sun, the conversion of their molar motion into molecular motion (heat) would dissipate them into vapor, and the repulsive energy thus developed would still keep the masses of matter away from the center of the system. In this case the result would be due to the direct antagonism of repulsion to attraction; in the present status of the system, it is due to the antagonism of tangential motion of masses to the attraction of masses; such motion being equivalent, in the one case, to the repulsion of particles in the other.

We know nothing, from our experience, either of the creation or the annihilation of force. The entire sum of it in existence within the range of observation is always the same. It may undergo change from one form into another, but in so changing, it neither gains nor loses. The original sum of heat and other forms of motion in our system, may now be inventoried under the heads: That which has radiated into space, and is outside the system; that which exists in the form of planetary motion; and that which is still active as heat or some form of its equivalent mostly in or near the sun, planets and satellites. With the last only have we anything at present to do in following the course of evolution.

SECTION 46.—In the nebulous state of our system, under the extreme attenuation which then existed, there could have been little or no diversity in the active properties of different kinds of matter. The several properties which characterize the different elementary substances as we know them were practically non-existent. The spectroscope appears to reveal the fact that the spectrum of certain stars is simpler than that of others, containing the lines only of three elements, hydrogen, calcium, and magnesium. These stars are believed to be the hottest. Hydrogen, nitrogen, and an unknown gas have been detected in nebulae. Perhaps, as Lockyer's theory supposes, if the heat was sufficient, some one form alone of elementary substance would appear as the ultimate form of material existence. Great heat or great attenuation by whatever caused would appear to be incompatible with the existence of most so-called elementary substances. The effect of cooling and condensation would be to enable these elementary forms gradually to emerge; and as matter passed through the gaseous and liquid forms to the solid, its properties would steadily increase in number and variety. A passage from Faraday (quoted by Professor Crookes, *Nature*, August 28, 1879) illustrates this subject, beginning, however, with solid matter and following it through its changes of form and properties:

“As we ascend from the solid to the fluid and gaseous states,

physical properties diminish in number and variety, each state losing some of those which belonged to the preceding state. When solids are converted into fluids, all the varieties of hardness and softness are necessarily lost. Crystalline and other shapes are destroyed. Opacity and color frequently give way to a colorless transparency, and a general mobility of particles is conferred. Passing onward to the gaseous state, still more of the evident characters of bodies are annihilated. The immense differences in their weight almost disappear; the remains of difference in color that were left are lost. Transparency becomes universal, and they are all elastic. They now form but one set of substances, and the varieties of density, hardness, opacity, color, elasticity, and form, which render the number of solids and fluids almost infinite, are now supplied by a few slight variations in weight, and some unimportant shades of color." Professor Crookes has shown that, in radiant matter (extremely attenuated gas), the physical properties of different substances are identical.

With sufficient cooling, our globe would assume the liquid form under the action of chemical and physical forces. It would then exhibit properties which belong to liquid substances. With further contraction, cohesion and adhesion come into play, and solid substances are formed. Minerals come into existence. An atmosphere surrounds the planet, and oceans cover the surface. Matter differentiates and new forms of it appear. Crystallization takes place as the harbinger of organization. Colloidal substances are at length developed; the simplest forms of life emerge into existence, and become more and more complicated through vegetable and animal elaboration, till man appears, the highest individualized existence of which we have any experimental knowledge.

Cohesion did not exist in the nebular form of matter, and when it was manifested, it was no special creation of a new force, but the modified manifestation of a force already in existence. It was the result of attraction or gravitation—pressure under the atmosphere and other superincumbent masses—made

possible through the reduction of repulsion by the loss of heat. The same is not so obvious of adhesion and chemical affinity; but even these are forms of attraction which could become operative only through the loss of repulsion. Gases do not readily combine; it often requires pressure and other devices to enable them to do so. Solids rarely act upon each other in a chemical way. Most chemical actions take place in solutions in which the atoms are free to move among one another and near enough to be subject to mutual influence. Crystallization takes place most readily from liquids. All these activities connote the presence of the requisite mean of heat, expansion, and repulsion. There can be no organization but in the presence of a comparatively small range of temperature. For this reason, in the early stage of the planet's existence, the loss of heat (and with it of light) was necessary to render organization possible on the planet, but when this condition was attained, organization was not possible without receiving motion in the form of light and heat from the sun. Owing to planetary rotation there was diurnal variation in temperature with the alternation of light and darkness, conditions of most forms of animated existence with which we are acquainted, and of all the higher. Motion adequate to the ends of organization has been conserved to our system by its central luminary, notwithstanding the loss of it in some of the surrounding planets. The sun radiates heat, light, and actinism on the earth; the sun gives, the earth receives—a form of duality in which the sun becomes the generator and the planet the mother to bring forth organization and life. Now, all life, all phenomena of whatever kind, are ultimately resolved into active forces, into motion, and all motion is alternating, rhythmical, dual. All present phenomena depend on present forces, and these are all derived from the forces in the primitive nebula in which their simple form was that of attraction and repulsion, or what was substantially their equivalent.

NOTES.—1. Of late the nebular hypothesis has fallen into a somewhat disturbed condition, and it would be quite impossible to make a statement like the preceding so general as not to conflict with some of the modifications. But, of

course, all the emendations assume the substantial truth of the theory; only Stallo has attacked it apparently with intent to kill. 2. The quotations and statements in the preceding chapter, on the views of Newton, Young, Glennie, Croll, Lamé, and Taylor, are taken from an article on Kinetic Theories of Gravitation, by William B. Taylor, in the Smithsonian Report of 1876. An account of LeSage's theory is found both in Taylor's article and in Tait's Recent Advances in Physical Science; that of Walling in a number of the Record of Science. The sources of the others are indicated in the text.

CHAPTER IX.

CHEMISTRY AND PHYSICS.

SECTION 47.—The behavior of the forces as made known by the sciences of physics and chemistry, goes to confirm the doctrine of an original antagonism in the constitution of things with attraction and repulsion as primary and prevailing properties of matter.

Chemical attraction and the strife of elementary atoms which results from it, and which might be called competitive affinity, are the leading facts with which chemistry has to deal. The molecule is defined to be the smallest particle of a substance which can exist and still retain its identity. The smallest particle with which chemistry deals is the atom. Atoms combine to form molecules, and this is true of elementary as well as of compound substances. In compound substances the atoms are unlike, in elementary substances they are held to be of the same kind. But it is doubtful if even here there is absolute homogeneity. The atom is not at all a perfectly rounded, isolated, and independent thing of itself. It has relations, and relations cannot exist without differences and contrasts. It is a property of the individual atom to combine with another atom even of its own kind. Thus two atoms of hydrogen unite to form a mole-

cule of hydrogen; the same is true of chlorine; but if the two elements are brought in contact, the atoms forming the hydrogen molecule separate, while the chlorine atoms behave in like manner, and the atoms of hydrogen uniting with an equal number of chlorine atoms form hydrochloric acid. Hydrogen gas does not exist in an atomic condition as simply H, but it is formed of molecules consisting of two atoms each, H-H. The same is true of oxygen, O-O. But while the hydrogen atom only unites with one atom of another element to form new compounds, the oxygen atom unites with two. The "valency" of the carbon atom is still greater; it unites with four atoms of other elements to form its compounds. It is owing to this property of the carbon atom—"the affinity of carbon for carbon"—that it enters into such a variety of compounds, and becomes the ruling element in organic chemistry (Wurtz). Thus we must regard the atom itself, not as an integral unit homogeneous throughout, but as polar in constitution with attractions for other polar units. Judged by known analogies, atoms must be in some sense, of unlike or opposite character, else they would not have the properties of "affinity" and "atomicity," whereby they unite together. The molecules of different elements may enter into chemical union with each other, not by virtue, however, of their molecular properties, but, as now interpreted on high authority, by virtue of their atomic properties. The unlike, polar, or whatever property it may be in consequence of which the union takes place, resides wholly in the atoms. Certain atoms in the molecules, and not the molecules acting as units, exercise the mutual attraction necessary to the chemical union. Thus at the very deepest point to which it has been possible to pursue the mysteries of the constitution of bodies—the atom—heterogeneity in the form of opposition or contrast is identified. But even if molecules enter into combination as chemical units, as able chemists still hold, none the less is this heterogeneity or polarity present in the chemical constitution of bodies.

SECTION 48.—Chemical reactions in which one chemical atom or molecule replaces another present complications of inter-

change so diversified that no adequate conception of them can be given in few words. From our point of view, we might characterize these reactions as the strife of atoms and molecules to supplant, or take the place of, one another. Chemical changes to a very large extent may be regarded as the contest of chemical units for place and precedence. It is not necessary for our purpose to illustrate so familiar a subject by examples, since these may be found in abundance in works on chemistry, as elective decomposition and recomposition, or elective affinity, simple and compound.

SECTION 49.—The energy with which atoms and molecules unite to form compounds depends primarily on the relative character of such atoms and molecules. The more unlike these are—the greater the contrast in their sensible qualities—the greater as a rule is their affinity for one another, uniting with greater avidity, and being separated with greater difficulty. “The opposition of properties is the cause of the chemical affinity,” and “the more complete the opposition of properties may be, the more intense is the affinity by virtue of which combination is effected.”—(Kane.) Oxygen and chlorine in combination with the metals, acids with the bases, with the alkalies, are examples of great contrast in the qualities of the substances, and great energy in combination. And the resulting compounds are not a union of the qualities of the substances combined; are not like either, but totally unlike both, thus contributing to the diversity of material existence.

SECTION 50.—The leading forms in which attraction manifests itself in the phenomenal world are: First, that of gravitation, or that which obtains between masses (physical); secondly, that of cohesion between like atoms or molecules (chemico-physical); and thirdly, that of affinity between unlike atoms and molecules (chemical). While gravitation has no direct form of antagonism it is nevertheless met by many indirect forms of it. The planets are held to their orbits against the force of attraction by the incessant strain of planetary movement to proceed in a straight line. In the formation of vapor by the sun, the molecular

attraction of cohesion is overcome to be resumed on condensation ; so that this antithetical phenomenon of the rise of vapor and the fall of rain does not take place without the concurrent struggle of attractive and repulsive forces, although in the rise of the vapor the antagonism to gravity is indirect in its method rather than direct.

Motion in the form of heat—separative or repulsive motion—is the great antagonist of cohesion and chemical attraction. The homogeneous metal first expands, then melts, and is finally dissipated into vapor by the absorption of heat. The most refractory compounds are decomposed by the intense heat of the compound blow-pipe and of the electrical current. But for this same repulsive energy, gravity would force all substances into a compact mass, and there would be an end to the succession of phenomena.

SECTION 51.—The energy of chemical attraction is a matter of curious interest on account of the various antithetical forms under which it may be made to appear. While two unlike atoms are still in isolation, they may be regarded as containing a fund of energy which can only be manifested by entering into chemical union. In view of their mutual relations they may be regarded as polar, as positive and negative, which on sufficient nearness of approach under proper conditions are united together by mutual attraction. The power which is in some way or other inherent in the nature of the atoms before union, may be denominated the energy of atomic dissociation. We should have no *a priori* conception of the existence of this energy ; we only know of the marvel because it has been revealed by the phenomena of chemical combination and decomposition. When chemical union is taking place the energy of atomic dissociation is manifested in a sensible form, usually as heat. Under ordinary circumstances the union of dilute sulphuric acid and zinc generates heat, but in the cell of the galvanic battery, with the collocations there provided, such union of acid and zinc generates a current of electricity. Whatever the product, there is nothing like creation in either case ; it

is only a change in the form of the energy by which it becomes revealed to the senses as heat or as electricity. If the electrical current be made to pass through water it decomposes the liquid into its elements, oxygen and hydrogen; and while the electrical current thus disappears, the energy of atomic dissociation reappears in the separated elements of the water. And this energy is shown to be very great; that which is necessary to decompose a pound of water would lift more than five million pounds one foot high. Faraday is often quoted for the fact that the electricity which disappears in decomposing a grain of water is equivalent to a flash of lightning in a thirty-five-acre cloud. The instantaneous union of oxygen and hydrogen to form a very small drop of water is attended with a deafening report; when slowly burned in the compound blow-pipe their union to form water is attended with intense heat. In the explosion of dissociated oxygen and hydrogen to form water there is collapse; in the explosion of gunpowder there is sudden expansion. When gunpowder explodes it is the result of the chemical union of molecules; when nitro-glycerine explodes it is supposed to be due to the direct union of atoms; and atomic dissociation is so much more complete than molecular dissociation, that the union is more sudden, the volume more largely increased, and the violence of combination greater (Cooke). The energy of atomic dissociation is in this instance transformed, not into heat or electricity wholly, but into an expansive force which is irresistible. The violence of volcanoes and earthquakes is probably in part due to the repulsive energy which is generated in the interior of the earth by chemical changes. There is no doubt that, in the processes of nature as well as in those of art, the energy of atomic dissociation is transformed by chemical union into the energy of expansion, when we have the paradox that chemical attraction may generate physical repulsion with manifestations of extreme violence. Atomic dissociation constitutes an immense fund of working energy on our planet, of which the familiar forms of food and fuel are conspicuous examples.

SECTION 52.—The atom is never at rest. Even in apparently the most quiescent solids, and in bodies subjected to the lowest known temperature, there is constant action in their atomic and molecular constituents. In fluids the motion is still greater; in gases it is greatest, and the more the gas or vapor is heated, the greater is the energy with which atomic movement goes on. Bodies exist in different states, whether as solid, liquid, or gaseous, in consequence of the relative degrees with which their "corpuscles" are affected by the antagonistic forces of attraction and repulsion.—(Davy and others). According to the law of Avogadro, equal volumes of gases or vapors, simple or compound, contain equal numbers of atoms, pressure and temperature being the same, no matter how different their specific gravity may be. The relative weights of equal volumes of different gases is in proportion to the relative weight of their atomic constituents. If a cubic inch of oxygen is sixteen times heavier than a cubic inch of hydrogen, the oxygen atom weighs sixteen times heavier than the hydrogen atom.

SECTION 53.—The leading property of gases is their elasticity, the tendency to resist the limits to which they are confined. No gas keeps the precise limit of volume it may have, except by the compulsion of a force which acts in opposition to its struggle ever more to expand. It always fills the room allotted it, and many gases may occupy the same space by diffusion into one another, each one of them filling the space very much as if none of the others were present. The volume of any gas is, by the law of Boyle, in inverse proportion to the pressure to which it is submitted;—there are, however, slight variations from this law. Again, the volume of any gas is by the law of Charles, in direct proportion to the temperature. That is, reckoning from the absolute zero 273° below freezing, the volume of gas at freezing would be just half as great as at 273° above.

Physicists agree that in gases and vapors the atoms or particles are flying about with great rapidity, and in every possible direction, striking against one another, and against the walls of the vessel in which they are confined. It is in this way that their

elasticity is accounted for. When the volume is reduced by pressure, the atoms have less distance to go before impinging upon one another, and upon the sides of the vessel, their contact is more frequent, and consequently, the resistance to confinement is greater than when the same number of particles occupy more space under less pressure. The expansive force of gases increases with the increment of heat, owing to the greater activity of the moving particles, in consequence of which they strike one another and the walls of the vessel with greater frequency and force. And since the resistance to pressure is the same for all gases under like conditions of heat and pressure, and since the number of their atoms is equal while their weight is different, the lighter atoms must make up in vigor of motion what they lack in mass in order to maintain the same degree of expansive force. It is calculated that at the temperature of freezing and under the ordinary pressure of the atmosphere, the atom of hydrogen moves at the rate of about seventy miles per minute, in which time it comes in contact with other atoms about 1,062,000,000 times! Thus we may look upon every ounce of air, of vapor, of the gaseous form of any substance, as the theatre of Lilliputian warfare in which mutual blows are liberally given; and yet both in art and in nature this conflict of invisible atoms is attended with results which are truly gigantic. Steam is a mighty and pliant servant if properly managed; if not so managed, it becomes a remorseless agent of mischief.

[I am aware that the able author of "Modern Physics" has attacked the kinetic theory of gases with a number of other concepts and theories current among physicists. While it is probable that physicists do not, so much as he represents, regard their concepts as identical with things, yet he appears somewhat to have shattered the current mechanical framework of modern physics. But after all, this subject is very much entangled with the uncertainty of terms and their meanings, and we think that the disputants pro and con are very liable to lose the thread of strict logical consistency. I wish it to be understood that the statements of this and the two preceding chapters have been

made on authority mainly. Only a professed physicist could present these subjects with the authority of an original].

SECTION 54.—When a solid becomes a liquid, a large quantity of heat assumes a form which is not cognizable by the senses. It does not therefore pass out of existence; it is still a form of energy, now exerted to keep the particles asunder so that they may move among one another. When a liquid passes into a gaseous condition, a still larger quantity of heat becomes imperceptible, and the particles of gas are thrust still farther asunder. There is now a great amount of atomic motion, which, by suitable arrangements may be converted into the motion of masses. Machinery is made to move by the expansive power of steam. An absolute condition of such transformation of motion is that the point at which motion is communicated shall be colder than the point from which such motion emanates. The steam in the boiler must be hotter than when it reaches the condenser. It cannot move the piston except by losing a part of its heat; consequently, if the cylinder and the surrounding atmosphere are as hot as the steam when it reaches the piston, there can be no communication of motion, and upon opening the throttle-valve the machinery would respond only by continuing to stand perfectly still. Heat being equal at all points inside and outside the chambers, repulsion would be equal and opposite on the two faces of the piston. Modern civilization rests on the fact that great inequality of temperature may be produced whereby the repulsive force of a common-place vapor may be greater in one direction than in another, and thus be made a propulsive force available for the great ends of industry and commerce. Work is obtained out of that form of motion which we call heat by accumulating a “head” of it, so that it shall act with greater force for the time being on one end of the piston than on the other; just as on the hypothesis of LeSage, Walling, and Croll (section 42) concerning infinite lines of force moving in all possible directions, the work of gravitation takes place by the interception of those lines, in consequence of which, the impelling force acts with greater energy on one side

of the planet than on the other. In the compressed-air engine used in the tunnel of St. Gothard, there is an accumulated head of force in the reservoir of compressed air which is thence delivered where there is no such accumulation, and where work may be and is done. The point from which the working power emanates—the reservoir—and that at which it acts—the cylinder—stand in the relation to each other of plus and minus (March, 1877). There can be no work done without heterogeneity—without unlike conditions, without opposite states, answering to plus and minus or positive and negative.

SECTION 55.—The leading conception of mechanics is the use of power by means of machinery to overcome resistance. Without the conception of antagonistic forces there could be no philosophy of mechanics; without the means of overcoming resistance there could be no practical mechanics. Is there a weight to lift from a lower to a higher level, or to remove from one place to another, or a product of the earth, or an object in nature, to put in form for the uses of life? To these ends we have the “mechanical powers,”—the lever, the wheel and axle, the pully, the inclined plane, the wedge, and the screw, with all the manifold forms of machinery into which these enter. It is the function of the vehicle on the highway, of the train on the steel-rail, of the ship on the river or the sea, of the plow that turns the soil, of the one machine that harvests the grain and the other that threshes it, and the mill that grinds it, of the tool or the machine which shapes the fabric of whatever kind,—it is the function of all these to overcome resistance. The round of changes by which the lump of ore is transformed into a thing of use, or that by which the stone is lifted from the quarry, put into shape, and laid to its place in the wall, or wrought into marvelous shapes of beauty,—all these operations are so many forms of the encounter of opposing forces in which the principle of Newton’s third law of motion holds good, that “to every action there is an equal and opposite reaction.”

SECTION 56.—Polarity is a term which has been used even by scientific men with considerable of latitude. Its character is best

shown in magnetism and electricity. Here there are two actions called positive and negative which are equal and opposite; and they always accompany each other as "if they were united from the same head." Faraday exhausted his resources of experiment to charge bodies with absolute magnetism, that is, of one kind without the presence of the other, but without avail. This is a magnetic condition which it is not possible to bring about, and it is one which never exists. Like poles repel, unlike poles attract. The positive is not merely indifferent to positive, or negative to negative; they absolutely and always repel. This mutual repulsion of like, and the mutual attraction of unlike is the most pronounced form of polar phenomena. Chemical attraction is in some respects so like electrical attraction as to be suggestive of polar relations. Professor Cooke states that chemical affinity "is a manifestation of a molecular condition which we may distinguish as chemical polarity." But here like atoms do not repel; in crystallization they even attract one another. In cohesion and in crystallization the attraction may be regarded as polar in its character, in some such sense as the elementary molecule is polar when it consists of two halves or atoms coupled together as one. But in chemical reactions unlike atoms attract each other as the unlike poles of the magnet, or as objects in opposite electrical states. In such electrified objects, however, the degrees of attraction vary only according to a uniform scale, while in atomic attraction or chemical affinity each combination has its own measure of power; and we may assume that the more distinctively opposite in character the atoms are, the greater is the attraction of one for the other. It is held "that the chemical activity of a substance depends on the degree of polarity inherent in its molecules"—(Cooke). The term polarity is applied to light in a sense somewhat different still. A ray of light direct from the sun may be regarded as a thread with pulsations filling the thread to roundness; but when this ray has passed through tourmaline, the vibrations take place only in one plane, and the thread is no longer round but flat; light is then said to be polarized.

In isomorphism different elements and compounds crystallize in identical forms; in dimorphism the same substance crystallizes in two unlike forms; in isomerism compounds of different sensible qualities contain precisely the same elements in the same proportions. Perfumes, which are very unlike, may have the same elementary constitution. Protein exists in upward of a thousand isomeric forms—(Cazelles). In allotropism the same elements assume different properties, as in the familiar example of oxygen and ozone. In all these instances of isomorphism, dimorphism, isomerism, and allotropism, the behavior of the atoms or molecules is suggestive of the presence of polarity.

The relation of polar phenomena in chemistry and in electricity is aptly shown by the production of the electrical current in the galvanic battery, and the action of that current on chemical compounds. Thus, as has already been stated, the current is generated by chemical combination in the cell, and thence passes along the conducting wire, and may end in the decomposition of water. In the act of combination, we may infer that a polar force is liberated in the form of a current which consists of two lines of force passing in opposite directions, and that this current when it enters the water changes into the polar energy of the separated atoms of oxygen and hydrogen. The two lines of force equal and opposite along the electrical track through the water are explained by the theory that, like two files of soldiers marching elbow to elbow, and step by step, in *opposite* directions, the atoms of oxygen and hydrogen slip by one another moving in two lines, the oxygen to the positive pole and the hydrogen to the negative pole, and deliver themselves an atom at a time endowed with the polar energy of separation—energy which is equivalent to and identical with that which the uncombined acid and zinc had at the commencement of the process.

SECTION 57.—It may well be said that there is a tendency in nature for active forces to assume dualistic, polar, or opposite forms of manifestation. The principle goes down deep into the constitution of things, impresses itself on the original sources of energy, and rules as a leading element in the phenomenal world.

Physicists tell us that the universe is a machine worked by adequate powers; and in the working, we find the equality of action and reaction, polarity with equal and opposite properties, attraction and repulsion, giving character to the constitution of bodies as well as to the manifestations of force. It is difficult to escape the conviction that the entire system of nature is compounded of the action of opposites, which in the aggregate balance each other. All phenomena are but transformations of energy, one body giving, another receiving. And we may add that in these transformations some form of polarity, contrast, or opposition enters as a prevailing feature. This is true of all the great cycles of movement and change in the physical world, which make life possible on earth. It lies obscurely even in forms and movements in which we should scarcely suspect it.

Take the single example of rotary motion so much used in mechanics, and so apt to spring up in phenomenal activities. The polar action of electrical currents and of magnets may be placed in such relations to each other as to produce rotary motion, the conducting wire revolving around the magnet, or the magnet around the conducting wire. By the proper arrangement of machinery, forward and backward motion is readily changed into circular motion, and the play of the piston may be changed into the whirl of a thousand wheels. Suspend a ball by a string and start it with a pendulum motion; it is no great step from the direct movement back and forth in the same plane to a divergence on each side of this plane so as to form an ellipse with an extreme difference between the lengths of the axes; and as this axial difference is diminished, the elliptical orbit approaches the circle. During the oscillation of the ball in the same plane, the extremities of the arc described might be regarded as the poles of motion; with divergence to form an elliptical orbit, the poles would still be at the extremities of the longer axis; and when the orbit should become a circle, the polarity would be so obscured that any two points at which the circle would be cut into equal parts, might be assumed as the poles. In the first action of the ball it is counter-movement

first one way and then the other; the counter movement is still obvious enough in the ellipse, and though obscured in the circle, it is still certainly there. Long ago Democritus derived rotary motion from impulse and reaction.

The tipping of a vessel partly filled with liquid back and forth with only a slight variation from the direct line of movement, readily converts the motion of the contents into a vortex. A current meeting with obstruction, or two currents meeting each other are very apt to set up vortical movement. Pulverized indigo, charcoal, or carmine in water keeps up constant movement, mostly vibratory; and when very fine, the particles not only vibrate, but manifest irregular axial rotation.—(*Popular Science Monthly*, October, 1877, p. 657).

Now, even if the vortex atom or ring be received as the ultimate element of matter, still we do not get rid of dual and antagonistic action as the ground work of phenomena. Any motion of the kind, whether it be in a closed ring or an open spiral, involves counter movement without which the phenomenon could not take place. In the cylinder of the engine, the power acts in a straight line driving the piston back and forth. The rim of the balance wheel involves a similar antagonism of movement, finding limit at the end of any diameter assumed, and thence returning, not like the piston in a direct line, but in a curve to reach the opposite limit. While the one moves in a straight line, the other moves in curves on either side of such line; but the movement is substantially as antagonistic in the one case as in the other. The vortex motion of Helmholtz and Thomson involves antagonistic action as surely as the atom of Bosovich, Bayma, or any of the others, however obviously such atom be endowed with original attraction and repulsion, and however much these properties may be obscured in the vortex ring.

SECTION 58.—The principal sources from which working power is drawn are: 1, fuel; 2, food; 3, the wind; 4, streams of water; and all these are due to the action of opposing forces. By chemical combination with oxygen fuel gives off

heat, and thence is obtained the power which heat affords. The motion which proceeds from the fire is communicated to the water and forces asunder its molecules, converting it into steam. Heat maintains the expansive tension—the repulsion of the particles of vapor—which is communicated by suitable arrangements to the propulsion of machinery. A large part of the industries of civilization are dependent on the energy of the dissociated carbon and hydrogen of fuel. Food is of similar character. The complex compounds which constitute food are held together by feeble affinity, and in course of the digestive process, the elements they contain readily fall into simpler and more permanent combinations, and a large amount of force is set free which the animal economy utilizes for locomotion and for all functional activities. Food is partly burned in the lungs and produces heat. Fuel and food are both of vegetable origin, and the vegetable is a medium of power with equal and opposite chemical reactions in its formation and destruction. By the action of the sun upon the leaf the carbon and oxygen of carbonic acid are thrust asunder, and the carbon is appropriated by the plant or tree, and stored up as fuel in the form of wood and coal. The energy necessary to separate the carbon of a pound of coal from its oxygen in the carbonic acid of the atmosphere, would lift ten million pounds one foot high. In the act of combustion the carbon reunites with the oxygen, and this immense energy in the form of heat is given off to be utilized at will. This heat is a repulsive energy, and is the equivalent of that repulsive energy from the sun which effected the separation of carbon and oxygen in the leaves of the growing plant and tree. The work of chemical dissociation at one end absorbs a store of power; recombination at the other end sets it free. The amount of heat developed by the oxygenation of the carbon is the same whether that oxygenation take place rapidly by combustion or slowly by natural decay.

In the case of food the elements are held together in a manner so feeble as to be equivalent to atomic or molecular dissociation. In this form the compound is unstable, and its elements

in a condition to seize on one another in fast chemical union. This peculiar state of the food-elements is brought about like the condition of actual atomic separation in fuel, by the action of the sun; and as the fuel delivers energy on the reunion of carbon and oxygen in combustion, so food delivers energy by falling from a state of comparative dissociation into close chemical union in course of the several stages of digestion and vital utilization.

The streams which run our mills and the winds which propel our vessels and drive machinery, are both originally due to the action of the sun. The molecules of the atmosphere are thrust further asunder by the action of heat, and thus made lighter, whereupon they rise to higher levels freighted with vapor. The motion as well as the direction of atmospheric currents are determined by differences of weight in different strata and at different places, and by the earth's rotation and the inequalities of its surface. The wind-system is throughout the play of attractive and repulsive energies with constant disturbance of equilibrium and constant action to restore it; and motion takes place in the direction of least resistance.

The power of running streams must be traced back to the action of the sun in expanding the water into vapor, when it rises into the upper regions of the air, and is carried far away by atmospheric currents to condense at lower temperatures, and fall as rain. The work done by the rain is manifold and indispensable. It brings down nitrogen from the atmosphere and dissolves certain elements of plant-food to be utilized in the process of growth. Part of the rain which falls on the land is again evaporated; part of it flows over the surface and finds its way directly into streams. Another part of it sinks into the earth, and again emerges in the form of springs whose rivulets are the source and support of rivers. Thus the water which was first raised as vapor, gets back to the sea. By the repulsive energy of heat, water is made lighter by conversion into vapor, and then by the action of gravity it is pressed into higher regions of the atmosphere, where it condenses by attractive energy, then falls

by gravity, and by gravity along the bed of least resistance the streams pursue their way down to the ocean, floating vessels, turning mills, and reducing the continental levels by freighting sediment from the land to the sea. Without the play of antagonistic forces there could be no rain, and without rain the earth would be a desert.

CHAPTER X.

CONFLICT IN THE BIOLOGICAL FORCES.

SECTION 59.—The organism begins, grows, develops, and then declines, and at last comes to an end. The one is the movement of ascent, the other is that of descent. Throughout, the organism is itself in a sense a perpetual contest of opposing forces. The one set struggles to build up in an orderly manner, the other to pull to pieces. The one is integrating, the other disintegrating. From conception and birth till after maturity, the organizing forces prevail; during decline, and at death, and after death, the disorganizing forces are in the ascendency. The career of the organism may be regarded as a dynamical contest between opposing forces, always with the same result in the end, the victory of the forces of dissolution.

The forces which preserve the organism and operate it, when regarded as a related group, are called vital; and yet it does not appear clear that they are essentially different from those which are concerned in the destruction of the organism. They are physical and chemical forces which build up, and they are chemical and physical forces which pull down. There can be no construction without destruction, no life without death. The formation of tissue in the life-processes and the consumption of tissue in the same processes go on simultaneously as essential

conditions of the higher manifestations of life. Even the unconscious functions of the animal system involve a certain measure of the destruction of organized material for the power necessary to do the work. Every voluntary movement, every act of locomotion, every contraction of muscle in work or play, every thought, every feeling involves the destruction of living tissue. There is no manifestation of any form of organic power without the consumption and waste of organic material.

But whatever we may think of "vital force," this we have to acknowledge, that it is manifested in any of its forms only in connection with what we know as matter. We are here dealing with phenomenal things, and physical forces belong to matter, and chemical forces belong to matter, and in the same sense vital forces belong to matter—not to "brute, inanimate matter," but to phenomenal matter in the higher forms of its manifestations. Gravity and chemical affinity are not more properties of matter in general than life is a property of protoplasm in particular. Under the proper conditions electricity appears as a function of matter; under the proper conditions life appears as a function of matter. "Life is now universally regarded as a phenomenon of matter, and hence, of course, as having no separate existence."—(Prof. G. F. Barker). Science knows nothing of the mediævalism that matter is a dead something moved only by an extraneous and living entity—that is a metaphysico-materialistic survival. Our point, then, is that while there is antagonism in the physical properties of matter and in the chemical properties of matter, there is equal antagonism, now become more complicated and diversified, in the organic properties of matter. Or, it might be better to say that, in the physical, the chemical, and the organic behavior of matter, there is equal antagonism, assuming new and more diversified forms as the succession of phenomena rises in the scale of manifestation. But even on the theory that chemical force is an entity distinct from matter, and that vital force is a spiritual entity distinct from matter, still is antagonism, as obviously as ever, a fact of phenomenal existence, and this is the especial point in which our interest at present

centres. Ludwig, quoted by Stallo (*Modern Physics*, 19), said thirty years ago that, "Every analysis of the animal organism has thus far brought to light a limited number of chemical atoms, the presence of the light-(heat-) bearing ether and of the electric fluids. These data lead to the inference that all the phenomena of animal life are consequences of the simple attractions and repulsions resulting from the concurrence of these elementary substances."

SECTION 60.—What is the essential character of organic consumption and waste? It is a chemical change by the loss of force in consequence of which organized material loses its vital quality and becomes useless to the organic system. The complex substances which form the tissues and nourish them are held together by feeble chemical affinity, and readily fall into simpler and more stable combinations, and in doing so, they liberate force for the uses of the organism. In the contraction of a muscle, a part of the tissue undergoes this change and from living becomes inanimate, when the force thus liberated goes to the production of the mechanical result which the contraction of the muscle involves. We cannot think without the act involving a like change in brain substance, which in thus falling from a higher to a lower chemical state surrenders its living force and becomes waste matter subject to removal from the system. This waste which is constantly going on through all parts of the organism, must be repaired if the organism holds its own. It is the office of alimentation to do this. We have then the antithesis that while all the activities of the organism consume its tissues, and thus produce constant waste, the operation of the digestive functions furnishes material in fitting form and place for the repair of this waste. The once living material which becomes inert within the system is removed, and other material becomes organic to take its place.

We are aware that this statement traverses disputed ground. That view has been adopted which appears to have the greater support of evidence and the principal weight of authority. But for the end here in view it does not matter whether the working

energy of the system is derived from the breaking down of tissue in the animal, or from the direct breaking down of the unstable compounds which constitute food. In both instances it would be the falling from higher to lower organization, and the delivery in work of the energy thus set free.

SECTION 61.—The blood is the great carrier of the system. It takes away effete, used-up material, and delivers that which is to take its place. The waste is carried to the lungs, skin, kidneys, and thrown from the system, while the new material is delivered everywhere throughout the organism.

Concerned in these counter and compensating operations are two pumps, the blood-pump and the air-pump. The heart is a force-pump which sends the blood to every part of the system. This marvelous muscle is constantly exerted to overcome resistance, at more than seventy beats per minute during the entire period of life. It keeps in constant circulation about one-tenth the entire weight of the body. The circulation of the blood is but movement in opposite directions. The blood is constantly propelled from the heart, and as constantly returns to it. In its simple form in vegetable cells, the circulation consists of movement toward the nucleus with corresponding movement from it. In the lowest animal forms it may be only movement back and forth. And however large a part capillary attraction may play in the phenomena of circulation, we are still in the presence of mechanical action and resistance, in which a fluid without chemical affinity for the tissue through which it passes, is propelled along the capillaries by another fluid which has such affinity.—(Draper's Memoirs, XXVI. and XXVII. and Phys.)

By the lung pump, inspiration and expiration take place, being a movement in counter directions of the gaseous elements concerned in breathing. Oxygen is taken into the lungs, and oxygen, carbonic acid, and vapor exhaled from them. The blood receives oxygen through the lungs, and delivers in return carbonic acid, vapor, a waste material from the tissues of the system.

SECTION 62.—The contraction and expansion of muscles in every part of the animal structure are opposite forms of action, and in the contraction of muscles one action is opposed to another; and this counter strain is necessary to their co-operation in the production of results. The simple act of standing erect is accomplished only by the mutually opposing action of muscles. And when it comes to walking, leaping, running, dancing, all the manifold movements of the body, this balancing of muscular action assumes an almost infinite diversity.

SECTION 63.—The bulk of animals is determined by opposing factors. The weight of the body must be supported, and it may be greater in the water than in the air. The animal that walks may have more weight than the one that flies. The living creature whose tissues are frail must be small, although it crawls. The animal which has to protect itself by fleeing must be of lighter build than one which has some other means of defense. There will be an intimate relation between its means of procuring food on the one hand, and its size, build, strength, agility, arms or the want of arms, on the other. Adaptation presupposes defect and implies limitation. When there is gain on one side, there is apt to be loss on the other. Great strength and great fleetness, for example, are incompatible, and the race-horse and draft-horse, the greyhound and the bulldog illustrate the excluded element of the antithesis.

SECTION 64.—The life of the plant is throughout a battle. The seed must get into the soil with sufficient moisture, and not too much. If too cold or too hot it would perish. When the germ has formed, it must push its way through the particles of earth, thus doing its first work in overcoming resistance. When above the surface a frost may nip it, or an animal, a bird may pluck it up, or an insect destroy it. Other plants may rob it of nourishment and shut out the light of the sun. It must make headway against the attraction of gravity; and if it prospers to become high enough to catch the wind, the storm may break it off. A drought may wilt it any time, or a flood may drown it.

And when it has reached the stage of bloom, it may fail of fertilization in a rain storm, or meet with untimely frost, and die at last without having accomplished the most important function of its existence, that of reproduction. Its part in the battle of life is not a strikingly active one, and little aggressive, but it is exposed throughout to attack, and only by the temper of steady resistance can it go through life successfully. Of all the innumerable seeds which germinate, only a small percentage reach maturity. Only the few win, the many suffer defeat.

The following is from an authority who had no theory of conflict to subserve: "The phenomena of crystallization lead, of necessity, to this conception of molecular polarity. Under the operation of such forces the molecules of a seed take up position from which they would never move if undisturbed by an external impulse. But solar light and heat, which come to us as waves through space, are the great agents of molecular disturbance. On the inert molecules of seed and soil these waves impinge, disturbing the atomic equilibrium, which there is an immediate effort to restore. The effort, incessantly defeated—for the waves continue to pour in—is incessantly renewed; in the molecular struggle matter is gathered from the soil and from the atmosphere, and built, in obedience to the forces which guide the molecules, into the special form of the tree. In a general way, therefore, the life of the tree might be defined as an unceasing effort to restore a disturbed equilibrium."—(Tyndall in *Nineteenth Century*). This is the dynamical view of tree-life in which the result springs from the conflict of forces. A similar view, but applied to organization in general, is given by Lester F. Ward (*Popular Science Monthly*, October, 1877): "Organization is the necessary consequence of the competition of the integrating and disintegrating forces, so long as the former prevail. The influence of the sun upon the matter of the globe is toward its disintegration and dissipation into gas. But for the opposing influence of gravitation, attraction, or concentration, this result would be speedily accomplished. But the resultant of these two antagonistic forces, at

a time when their relative power is substantially what it now is on the surface of our globe, is such as to render possible the form of evolution which we denominate organic life." And further: "We are thus brought into full view of the deepest truth that underlies the redistribution of matter—the profound antithesis between *gravitation and ethereal vibration*, which constitute in the last analysis, the true correlative *principles* of which evolution and dissolution are corresponding processes. These are the agencies which are at all times antagonizing each other in all parts of the universe, but whose exact equality in it seems to form a logical tenet of the modern cosmology. A certain golden mean between these forces, but in which the former must predominate, results in organization; star systems are formed in space, and life is developed out of the planetary elements." If life be thus educed from the play of antagonism, it is but the completion of the antithesis that antagonism should reappear in the play of life itself.

SECTION 65.—The battle of the plant is waged on its individual account, but in connection with its like, the success of every plant goes to the behoof of its species. There is a contest between species throughout the vegetable world, and there has been for the millions of years during which plant life has existed on the earth. This is as truly a territorial war as any which has been waged by national armies. There is a universal effort to advance as far over the earth's surface as the character of the soil and climate permit; and in this effort to advance, species meet on the same ground, and contend in Greek and Roman style for the mastery. "All the plants of a country are at war, one with the other."—(De Condolle). The territorial limits of species have been largely determined by this struggle. "We must regard the bounds of each species' sphere of existence, as determined by the balancing of two antagonistic sets of forces"—(H. Spencer). The geographical distribution of species, and the character in general of the flora of any locality are in a great measure the result of the contest of plant with plant and of species with species. In speaking of the forests on our

Indian mounds, Darwin exclaims: "What a struggle between the several kinds of trees must here have gone on during long centuries, each annually scattering its seeds by the thousand; that war between insect and insect—between insects, snails, and other animals with birds and beasts of prey—all striving to increase, and all feeding on each other or on the trees or their seeds and seedlings, or on the plants which first clothed the ground and thus checked the growth of the trees! Throw up a handful of feathers, and all must fall to the ground according to definite laws; but how simple is this problem compared to the action and reaction of the innumerable plants and animals which have determined, in the course of centuries, the proportional numbers and kinds of trees now growing on the old Indian ruins!"—(*Origin of Species*).

It is well known that as civilization advances certain plants disappear and others come in to take their place. This is the result of conflict between species under changed conditions of plant life which the clearing away of the forest and the cultivation of the soil bring about. While man has played his part in this contest of vegetable species with one another, hindering one and favoring another, animals have contributed their share toward determining the issues of the conflict. Animals like men have their preferences in the vegetable world, but unlike men who cultivate and extend their favorites, animals feed on theirs, and contribute to their extinction rather than to their extension. But, for this very reason, the grazing of herbivorous animals has no doubt had much to do with determining the character and limits of vegetable distribution. An annual, if largely fed upon, may perish from a locality entirely; the chances of a survival would, therefore, be with a perennial. If this perennial grew up quickly, and ripened its seed early, its chances of survival would be still greater. If, in addition it spread rapidly by means of underground runners, its chances would be still further enhanced. The grasses fill these conditions best, and some of them better than others. Even under the system of agriculture which has been devised by the intelligence of man,

these qualities favor the vigor with which certain grasses retain their hold on the soil, and find their way into new localities to the displacement of previous occupants.

No small influence in determining the geographical limits of species is the action of birds in scattering far and wide the seeds of the fruits on which they feed. They extend the outposts and assist the territorial conquests of their favorites.

The elevation of mountain ranges, and the elevation and subsidence of continental tracts have hindered and helped species by turns, and played no small part in making the floral map of the world. The change of climate thus effected by the change of level, and the isolation of districts by mountain barriers and submerged tracts could not but influence the ultimate results of the struggle between species. Add to this the great changes of climate which the earth must have undergone between such periods as that in which a semi-tropical flora prevailed within the arctic circle, and that in which ice a mile deep covered the north temperate zone down to the fortieth parallel, and we perceive what powerful agencies have assisted in determining the jurisdiction of the several floras among which the surface of the earth has been partitioned.

SECTION 66.—Substantially what has been said of plants may be said of animals, with this difference, however, that the latter are more aggressive, attacking and feeding on one another as well as on members of the vegetable kingdom. The war among insects, fishes, birds, and quadrupeds is war indeed. Nor is this preying upon one another an incidental thing; it belongs to the system, and is part of the universal war in nature. So true is this, that even the paleontology of a period is incomplete till the remains of the carnivorous enemies of known herbivora have been discovered. Some species are fitted by structure and habit to prey on others, and without success in securing prey, they could not exist. Indeed, they never could have come into existence but by the development of tooth and claw, and instincts which enable them to sustain life by inflicting death. The cruelty of killing is in the "plan" of nature, but the suffering thus

caused is no greater than that of dying a natural death, which is equally in this plan. Death inflicted by carnivorous animals may average even less pain to the individual than death which comes about in other ways; and if we admit that puerility in philosophy, anthropomorphic omnipotence, we must concede that the difficulties of its responsibility for the occurrence of death by killing are no greater than for the occurrence of death by starvation, disease, or old age. The pain of destruction and death appear to be necessary conditions of sentient enjoyment. If beings live they must die; and if certain portions of the living kingdoms did not prey upon other portions, the aggregate of sentient existence with what enjoyment there may be in it, would be much less than it is. These are simple facts of what we hold to be the only possible form of universe.

Everything is prey; "every organized body, whether conservæ or moss, insect or mammal, becomes the prey of some animal; every organic substance, sap or blood, horn or feather, flesh or bone, disappears under the teeth of some of these."—(Animal Parasites, Van Benedin). The poet was not pessimistic but only matter-of-fact when he sung:

"For nature is one with rapine, a harm no preacher can heal,
The may-fly is torn by the swallow, the sparrow is speared by the shrike,
And the whole little wood, where I sit, is a world of plunder and prey."

—Tennyson.

Amid the beauties of an oriental scene Siddârtha (Gautama) saw deeper :

"He saw
The thorns which grew upon the rose of life:
How the swart peasant sweated for his wage,
Toiling for leave to live; and how he urged
The great-eyed oxen through the flaming hours,
Goading their velvet flanks: then marked he, too,
How lizard fed on ant, and snake on him,
And kite on both; and how the fish-hawk robbed
The fish-tiger of that which it had seized;
The shrike chasing the bulbul, which did chase
The jeweled butterflies; till everywhere
Each slew a slayer and in turn was slain,
Life living upon death. So the fair show

Veiled our vast, savage, grim conspiracy
Of mutual murder, from the worm to man,
Who himself kills his fellow; seeing which—
The hungry ploughman and his laboring kine,
Their dewlaps blistered with the bitter yoke,
The rage to live which makes all living strife—
The Prince Siddârtha sighed. 'Is this,' he said,
'That happy earth they brought me forth to see?'"

—*Edwin Arnold.*

SECTION 67.—Even deeper than the poets saw lie the phenomena of parasitic life. The microscope may penetrate farther than the vision of an oriental prince come to save the world. Microscopic creatures mercilessly prey on animals within and without, and while they consciously enjoy nothing themselves, their lives being purely reflex, they inflict pain on sentient creatures, thus lessening the aggregate of enjoyment. There are but few animals, if any, which have not their peculiar parasites, and there are "parasites on parasites." There is but one law governing the action of the parasite, and that is its own interest without the least benevolent regard for the friend on whom it preys. The mother ichneumon, by means of a thread-like ovipositor, inserts its eggs into the caterpillar, the sequel of which is that "the young ichneumon devours its nurse piecemeal, organ after organ; and for fear that death should supervene too quickly, the mother takes care to chloroform the victim beforehand to make it last longer." "Remarkable examples of the refinement of cruelty are to be found in this little animal world. It is not enough that some among them feed on the entrails of their young neighbors; there are wasps which, in order to make the agony last longer, place by the side of the eggs which they lay, chloroformed flies, which wait patiently for the time when they can yield themselves up, still palpitating, to these young tyrants." We will waste no sympathy on spiders which scruple not to inflict pain on their captives; but something like retribution may overtake them when the sphex seizes them, chloroforms them, and stows them away to be fed upon while still alive by the larvæ of this insect.

But if we have doubts as to whether insects, fishes, birds, or

beasts suffer when preyed upon by parasitic enemies, there is no longer room for doubt when we come to the higher animals and to man; and these are not exempt. "There is no organ which is sheltered from the invasion of parasites; neither the brain, the ear, the eye, the heart, the blood, the lungs, the spinal marrow, the nerves, the muscles, or even the bones. Cysticerci have been found in the interior of the lobes of the brain, in the eyeball, in the heart, and in the substance of the bones, as well as in the spinal marrow. . . . One kind of worm inhabits the digestive passages, some at the entrance, others at the place of exit; another occupies the fossæ of the nose; a third the liver or the kidneys." Trichinæ are found in the flesh of most mammals. "Leuckart counted seven hundred thousand trichinæ in a pound of the flesh of a man, and Zeuker speaks of even five millions found in a similar quantity of human flesh."—(Quotations of this section from Benedin's Animal Parasites.)

But after all that has been definitely ascertained concerning animal parasites which infest human beings, the half has probably not been told. There are vegetable as well as animal parasites, and some of them no doubt as deadly. A large portion of human diseases are believed with a good deal of reason to be caused by microscopic organisms which poison the currents of life. It is a cruel reflection, but one cannot help thinking, how many and what kinds of parasites will infest the "coming man."

The relation of parasites to their principals, and of the eaters in general to the eaten, may be regarded as examples of unhappy adaptation; but these should no more be taken as evidence of pessimism than examples of happy adaptation should be taken as evidence of optimism. If there be life at all on general principles—if the laws of life are not to be interfered with in an exceptional manner in the interest of well-being, this parasitic scourge must have place as the result of general causation in the legitimate operations of the system as a whole. The devouring process, even in its cannibal state, begins low down in the scale of animate existence. An enterprising amoeba will envelop another and digest it without scruple. The blood cor-

puscles in higher animals simulate this feat, and the larger ones swallow up the smaller. Cannibalism in nature has a long and diversified range of activity.

SECTION 68.—It is not in outright war between plants and animals that we are to look exclusively for reciprocal action between them and a mutual influence on each other's modes of being. The chlorophyl of plants absorbs carbonic acid, and having appropriated the carbon, exhales oxygen, while animals substantially inhale oxygen and exhale carbonic acid. Plants receive carbon through the green protoplasm of their leaves; animals throw it off through their lungs. In animals carbon is a waste product; in plants it is that which builds up. Plants purify the air for animal breathing, and animals enrich the air for plant nutrition. And again, plants under the influence of the sun elaborate organic material which is the ultimate support of all animal life; and the food having performed its function in the animal economy, returns disorganized to the earth and air, when plants again seize it, and subject it to renewed organization. The sun acts through plant life for the accumulation of force by atomic separation, changing inorganic into organic material—this is the lifting of the weight; and when these plant products are consumed by animals, they yield up their store of force to the production of results in the animal sphere, and in doing so the recombination of atoms into the inorganic form takes place—and this is the falling of the weight. The two operations are directly the opposite of each other, and yet only different phases of the same action, and necessary to the succession of phenomena. Accumulation and expenditure, the winding up and the running down, in the little as well as in the great, the one making the other not only possible but necessary in the economy of nature, are the two opposite and inseparable sides of the same thing. The unity of the whole is maintained by the antagonism of the parts. “Every action in nature is truly two opposite and equal changes, and, to be adequately apprehended requires to be seen in both its aspects.”—(Westminster Review, July, 1865).

Notwithstanding this opposition of results which compensate

each other, there is no contradiction in the physiological functions of plants and animals, life in the one being but a higher development of life in the other. "The life of the animal and the life of the plant are, like their protoplasm, and in all essential points, identical."—(President Allman's Address, British Association).

SECTION 69.—The universal struggle in the animate world is a condition of development and improvement in the character of living things. The weak and ill-adapted are weeded out; the stronger and better adapted survive. And this better adaptation implies new structures and functions, and greater complexity of organization. Superiority of race has, therefore, grown out of the struggle of existence; it is the result of conflict whether with changing climate and soil, or with competing and aggressive races. And since conflict is the capital factor of the process of evolution, it follows that man owes his superiority of structure, his existence as man, to conflict in the physical and organic worlds.

SECTION 70.—In the evolution and maintenance of organic forms there are two conflicting tendencies constantly in operation; the one is the persistence of type, the other the rise of variations which may be either improvement or deterioration. It is the conflict of heredity with an opposing factor, but the opposing factor would have no power to effect change of types but for the co-operation of heredity. The two counter forces unite to diversify and perpetuate species. Without persistence of type there would be no species, and without divergence there would be no diversity of type, and the organic world would be an impossibility.

SECTION 71.—Physiology is coming to be looked upon as the play of opposite and compensating forces. The general features of biological antagonism have been distinctly brought out by Herbert Spencer, who had no theory of antagonism to bias his statement. According to him, the organism is a dynamical result of the constant balancing of opposing forces. An instructive form of this antagonism obtains between the expenditure

for growth, development, and exertion of the individual on the one hand, and the expenditure for offspring on the other. Dr. Carpenter has formulated the theory that, "there is a certain degree of antagonism between the nutritive and reproductive functions, the one being executed at the expense of the other."—(Popular Science Monthly, August, 1879). A fine statement on this subject is to be found in Part Sixth of Spencer's Biology. This particular form of antagonism is part of a general antagonism which prevails among the functions of the organism; and we call especial attention to it, because it is typical of forms of antagonism which greatly prevail in the upper strata of existence, and with which man has much to do.

The functions of the organism are maintained in healthy activity and in symmetry of relations with one another, only by due expenditure from a common fund of energy. If more is expended for any function, there is less for the others. This form of antagonism obtains between growth and reproduction. The two cannot go on in full vigor at the same time. While growth is active, its draft upon the resources of the organism leaves none for reproduction; and hence, reproduction begins only when growth is nearly or fully completed. It is a part of the same fact that minute organisms usually multiply more rapidly than larger ones. Complexity of organism is in like manner opposed to fecundity. The simple organisms multiply more rapidly than the more complex. Again, if expenditure for the necessary activities of the individual life be great, there is less of the common fund for reproduction. Here are three sources of expenditure for the maintenance of the individual: That of growth, that which is concerned in building up complexity of organization, and that which administers to the wants of the individual. There are also three kinds of expenditure concerned in reproduction: That of maturing the egg or fetus, that of providing nourishment for the offspring after birth, and that which is required for the care of the young. While the first three forms of expenditure administer solely to the individual, the second three establish the offspring; both are drawn from the

resources of the individual, and what is used for the individual cannot be applied to the offspring, and what the offspring gets is at the parents' expense. Such is the antagonistic relation. It may be expressed in plain Saxon that, in this nutritive competition, what the one gets the other must do without. It may illustrate this, perhaps, to say that this simple fact is overlooked by the sticklers for woman's intellectual equality with man. They forget that, if she could maintain her own organic resources, and establish her offspring in theirs, and still be man's equal in intellectual resources, she would be a monster of power. Nature works in no such way. There is nothing accomplished in the organic world, or any other, without the expenditure of force; and if this force is expended in one way, it cannot be expended in another. It is a part of this general antagonism that, beyond a certain point, physical activity and mental activity are antagonistic; that, if the one is in excess, the other must be limited.

It may be remarked that the form of antagonism here brought into view is relative rather than direct. It is the antagonism of limitations, of gain involving loss, of progress necessitating retrogression,—that form of antagonism mainly to which it is the object of these chapters to call attention.

CHAPTER XI.

ANTAGONISM IN THE SPHERE OF MIND.

SECTION 72.—The mental sphere supervenes upon the biological, as the biological supervenes upon the physical and chemical; and in a certain sense and to a certain extent, the higher includes the lower. Mind is indeed very closely related to life; it appears far down in the biological scale, in germinal

form at least, by the double act of the individual which perceives outer conditions and adapts itself thereto. Properly to sense the conditions of life and to adapt life to them—this is the prevailing function of mind in all the grades of its existence. As force appears only in connection with matter, as life appears only in connection with organization, so mind appears only in connection with life. “Among advanced thinkers it is now unhesitatingly admitted that mind is a form or function of life.”—(Lewes.) We know nothing of mind as an independent entity; we know it only as bound up with physical organization. No independent entity heralds the body; and when the body becomes non-living, the mind escapes from the field of cognizance. It is manifested only in connection with a nervous system; and when that system is disturbed, the mind is disturbed; and when that system perishes, the mind which was manifested in connection therewith stops all its manifestations to us; and we may *believe* it to be still an existing entity, but we only *know* it as a thing that was. We have no quarrel with faith, but we have here to do only with science—with that which comes within the range of the knowable. Dr. Courtenay, Bishop of Kingston, and the great Dr. Priestly believed that the mind must perish with the body, and could only be restored to life by a miracle; but they had faith that this miracle would be wrought.

It is often repeated that “man is an epitome of the universe.” This is true if the doctrine of evolution be true,—man does comprehend the essential elements of all below him, with, of course, something else beside. We have found antagonism in the physical and chemical spheres and in the anatomical and physiological spheres. All these enter into the composition of man, and they bring their antagonism with them. If we look through the long lines of ascending forms in the living world, we find various forms of antagonistic phenomena, as the last chapter attempts to explain; and if man is the ultimate result of these lines of evolution, we should expect to find conflict in the grain of his constitution, and provided for in the moral and physical elements of his being. But on any view man cannot be sepa-

rated from the nature with which he is so intimately bound up in his life on earth. "Man and nature are two great effects, which coming from the same source, bear the same characteristics."—(Cousin.) If there be conflict in the physical world, there will be conflict in the mental world.

If it be, however, that man is an advance beyond all else that is animate on earth, he must embody some things nowhere else to be found. The tautology may be allowed us to say that he is qualitatively more than all beneath him. It may be true, or very nearly true, as Haeckel observes, "that between the most highly developed animal souls and the lowest developed human souls, there exists only a small quantitative, but no qualitative difference;" but it is manifestly different when we come to compare the highest human with the highest animal souls. For, since development consists in the differentiation of a simple function or faculty into a complex one by giving rise to new branches for the division of labor, a process which involves qualitative additions to what had existed before, then does human psychology contain something which is not to be found in the psychology of beasts. Man is the creature of mind beyond all others. But if antagonism obtain in the lower psychology, it is almost certain to obtain in the higher with the difference which refinement gives. More of this, however, in other connections.

SECTION 73.—The animal ancestry of man were actually forged into physical and mental form by conflict. Anthropoid forms were the composite result of these battle forces; and when the form which must be regarded as man was reached, he was a being framed by antagonism and fitted for war. No doubt the very first of beings worthy the name of man, were born to the heritage of battle. Climatic changes, inclemencies of the weather—excessive cold, excessive heat, storm and flood—are all aggressive forces which man must needs nerve himself to resist. The means of subsistence could be obtained only by a struggle. His right to esculent roots, nuts, berries, was contested by animals a little lower in the scale than himself. The

fishes, birds, and beasts on which he desired to feed, were coveted by other fishes, birds, and beasts which were better armed by nature than he to secure their prey. The contest was not merely with game for the possession of it, but with other creatures to prevent them from possessing it. Man was necessarily an aggressive being, pushing his own interests by making war on everything that stood in his way.

And what more natural in the course of this universal self-seeking than that man should come in collision with man, and groups of men with other groups? The right to a slain stag not being clear, the rival claimants would be almost sure to decide it by a trial of strength; or, if only one would fight, he would get the prize, and the other would go hungry, and perhaps starve. Meeting on the same grounds to contest for the same food, they would naturally regard each other as enemies to be driven off as the most obvious condition of self-preservation. An inoffensive, non-resistant race of human beings, if such could have come into existence, would very soon have been overwhelmed and extinguished by their more aggressive, violent, and self-seeking neighbors. Their bodies would have been taken for food, and their country used for a hunting-ground. If such a race should, by isolation, remain undisturbed till in later times when their conquerors had adopted agriculture, the innocent race would be reduced to slavery, from which they could only rise by the development of pugnacity—a condition not likely to come about.

But in what way must the earliest human race have distinguished itself from the anthropoid race from which it sprung? By greater efficiency in conflict—by that higher exercise of the reasoning faculties which led to the use of weapons of defense and of offense. To pick up a club from the ground, or break it from a limb, and wield it in self-defense, would be a masterly stroke of genius in whatever creature did it for the first time. To pick up a stone and hurl it at an aggressive beast would be a similar triumph of the inventive faculty. The genius who had shown the way would soon have imitators, and having tried these weapons for defense, they would soon use them for attack under

the pressure of hunger, and having used them on animals, they would very readily turn them against one another. As less primitive than the club, a desirable form of weapon would be a stick pointed at one end. Another stroke of inventive genius would be the insertion of a pointed sliver of flint into the end of a shaft, thus forming a rude spear. A sharp-edged sliver of flint would be turned to cutting purposes—perhaps the first tool used by mechanical man. From the use of accidental pieces of hard stone a great advance would be made by springing pieces of the desired form from the solid block. They could now make their own spear-points, and cutting and scraping stones. Strings might now be cut from the tendons and hides of animals. The string and the spear would be two elements of the bow-gun. Reduce the size of the spear for an arrow, and tie a string to the two ends of an elastic stick, and a new weapon would be invented, which appears to be very simple to us, but which was a great triumph of original suggestion when it was first done. Devices for attaching handles to axe-like and hammer-like stones, and slings for hurling round stones to great distances would be promising results of the improving intellect of primitive man. Weapons of stone would come at length to be polished by patient rubbing, and bone would be introduced for weapons, implements, and ornaments. Art would emerge into existence in connection with the leading ideas of hunting and war. The primitive artist would scratch a picture of the deer he hunted on the horns of the same animal.

From a red-hot stream of lava, the naked savage would readily acquire some experience of intense heat. From the effects of fire on the dry tree when struck by lightning and burned up, he would see on what the monster fed, and in order to keep it alive, the happy thought might occur to him to add such fuel as lay around in convenient form, thus performing an interesting and useful philosophical experiment. But this would not be sufficient; the fire would go out, and then it must be kindled anew. The means of doing this at will would be a great discovery, and from the nature of the case, it must have been the result of acci-

dent. Resorting to friction for some other purpose—perhaps the sharpening of a stick—it was happily discovered that it developed heat, and by persistence the presence of fire was evoked. They had now the means of roasting their prisoners and their game if they wished.

No doubt that all along the line of human development, necessity, aided by accident, has been the mother of invention, every new device having for its object some form of relief in difficult situations. Discovery and invention gave power, and power gave victory.

The elephant has been known to break a stick for the purpose of scratching off a leech, and to make a fly-brush out of a bush, and use it. Thus, the only tool-making and tool-using animal known, summons this resource of intelligence for protection against his enemies. Early man no doubt did the same. It is no exaggeration to say that man's first inventions, his first sallies of intellectual originality, were used to make himself stronger in the battle of life. Not only has the conflict, which man must needs carry on against all that oppose his wants, cultivated his pugnacity and made him a creature of conflict, but it has actually contributed more than all things else to make him distinctively an intellectual being. The most intelligent and courageous survived; the stupid, indolent, and cowardly succumbed. Mankind made progress, and progress came through conflict. What wonder that the history of the human past is almost wholly the history of war! What wonder if conflict is organized into the very tissue of the highest races on earth, and that they still fight with one another in manifold ways, while boasting of their civilization.

SECTION 74—All the manifold forms of human warfare have had two distinctive results in a sense the opposite of each other, yet co-operating to give strength for the conflict: while they cultivated the sentiment of hostility, they developed along with it the fellow feeling of mutual interest in a common cause, and made man a creature of sympathy, as well as of enmity. Two united were stronger than either alone, and nothing perhaps in

human experience has done more than the need of strength for every form of attack and defence, to induce men to unite their efforts, and cultivate by the absolute necessities of the case, the sympathies which pertain to fraternal co-operation. The common sympathy of the clan, the tribe, the larger aggregations of men, has largely grown out of the exigencies of combat for mutual protection; and the patriotism of modern times owes much to the same cause. This will be treated a little more fully hereafter.—(Sections 97-99).

SECTION 75.—While the organism may be defined a unit of resistance, or of response, to forces which act upon it from without; in all but the very lowest forms it adjusts this response by means of a nervous system, which forms the great connecting link between biological and psychological phenomena. G. H. Lewes observes that, "the genesis of subjective phenomena is determined by the action of the cosmos on our sensibility and the reaction of our sensibility.

The mental forms or laws of thought which determine the character of particular experiences, were themselves evolved through a continued action and reaction of the cosmos and the soul, precisely as the laws of organic action which determine the character of particular functions were evolved through a continued adaptation of the organism to the medium."—(Physical Basis of Mind, 318). While thus the organism is in a sense the antagonist of the inorganic and other forces without, it embraces within itself opposing forms of action which belong to the sphere of mind as well as to that of life. After a profound review of both fields of inquiry, Herbert Spencer affirms that, "As there are two antagonist processes by which consciousness is maintained, so there are two antagonist processes by which bodily life is maintained."—(Psychology II., 301, 302).

In simple reflex action an external stimulus is conveyed along the afferent nerve to the ganglion, and thence transmitted along the efferent nerve to the muscles, which thereupon contract. This contraction is a response to the initiative stimulus of an

outside cause; and the method of it is by two currents of nervous energy running in opposite directions, the first from the point of excitement at the surface to some point within the organism, and the second thence back to the surface for the production of the muscular result as a self-protective or self-promotive adjustment to the outside stimulant. Such is the general character of reflex action, and it tells nothing against it that the vegetative functions of the organism are under nervous control, for this is truly reflex, as may be readily shown. Reflex action may exist independent of conscious mind, as in very low forms under all circumstances, and in the vegetative system of higher forms, and in profound sleep, when the muscles respond to external stimulus without consciousness as usually understood, or any form of cerebral activity. It is true, G. H. Lewes has labored to show that consciousness and sentience are co-extensive and even identical, but this view can only be maintained by wresting from consciousness its usual signification, and applying the term outside the limit which this permits. But aside from the niceties involved in the question of consciousness, there is an increasing school of psychologists who regard reflex action as the type of all mental action, and even as the germ which passes by development into unmistakable mind.

As the recognition of external influences and response to them assume higher and more complicated forms, the nervous mechanism by which these higher results are produced, becomes more complicated in structure. Between the nervous system of man, and that of the lowest animal forms with traces of nervous structure, there are many degrees of difference, but these are supplied one after another from the lowest to the highest by the intermediate series of living things. The line of mentality, from the lowest to the highest, forms one series; the line of nervous mechanism, from the lowest to the highest, forms another series; and the two series, though by no means minutely graduated, are parallel, having a general correspondence with each other, and would be, if Leibnitz' philosophy were true, a clear enough case of "pre-established harmony." In the mental

series we have (1) reflex action ; a little further on is (2) instinctive action ; and still higher, and reaching to the highest, (3) rational action. The adjustment of behavior to a new situation of simple character may be a lower form of rational action, as a higher form of it would be the adjustment of behavior to a new situation which involves the balancing of a number of complex considerations. In the nervous series, there are, first, the afferent and efferent nerves united at the inner extremity by a swelling of nervous substance for simple reflex action ; then, there are many such swellings having nervous connections with one another, and communicating further on with still larger aggregations of nervous matter, all of which in some sort serve for the registry of impressions, or the record of experience however simple, and afford the basis of intuitive phenomena. The cerebrum belongs to higher creatures in the scale, and is the organ of reason and the will, there being a general correspondence between the degree of mental power and the texture, size, and complexity of the brain. In simple reflex action, we may contemplate the response as made to a simple touch or blow ; in rational action the response is made to a great complication of external influences. The worm which curls up at a touch, and the commander of an army who guards against surprise and repels an attack along his whole line, illustrate the difference.

The spinal cord is the principal organ of the reflex system and like the brain it consists of white and gray matter. Both the spinal cord and the brain are developed from the same "primitive trace," showing their intimate genetic relation to each other. The bones, moreover, which inclose the brain are but modified vertebræ, showing the genetic relation of the two. The spinal cord has two distinct functions: the one is receptive, sensational, and centripetal; the other is imparting, motor, and centrifugal. So it is probable that the similar substance performs a similar office in the brain. In the spinal cord with its outer connections, there is on the one side feeling, on the other motion; the one receives, the other sends out. In the

brain there are on the one side the impressions received from the stimulus of external things; on the other side, there is the impartation of executive purpose. Without these impressions from the outer world, the mind would be a blank, without thought and without will. This double action begins at the periphery and passing through the senses reaches the brain, whence it returns by nervous connections to the spinal cord and motor nerves to the external world, the place of beginning. This seems to be reflex action only become more complicated. In the case of the optic and olfactory nerves, the reflex action is directly from the brain, and in other instances it is from the medulla oblongata and spinal cord. It would be, of course, impossible in the present state of knowledge to show clearly the reflex nature of action in the higher phenomena of mind, and this may always remain an obscure subject; but analogical considerations point to the fact that in the higher as in the lower manifestations of mind—in the more complicated adaptation of the organism to its environment by complicated mental action, as well as in the simple adaptation which is effected by simple reflex action, the phenomena have the same type, similar to that of action and reaction in the physical world.

G. H. Lewes, who believes that the process of sensation (as well as of thought) is triple, the third element being the ganglion which connects the afferent and efferent nerves, affirms that "sensation is a mental state under the same aspect that thought is a mental state; and that under the obverse aspect both are bodily states. In other words, both are functional activities of the sentient organism, involving the same structural conditions, the same laws of reaction, and differing only in the different proportions in which their elementary factors are combined."—(*Problems of Life and Mind*, Third Series, 267). Again: "The sexual instinct, the migratory instinct, the aggressive instinct, the social instinct may, indeed, 'act blindly,' if by that is meant that the animal has no distinct prevision of distant consequences; but they are sensorial processes of the same logical order as those which determine intelligent acts. The difference is this:

in the intelligent act there is interposed between the primary stimulation and the final response an excitation of residues of a wider experience; the stimulation rouses its retinue of nascent feelings, sometimes as auxiliaries, sometimes as checks, and among these are often

‘General truths, which are themselves a sort
Of elements and agents, under powers
Subordinate helpers of the living mind.’

These are represented by ideas of duty, danger, convenience, or pleasure, and they determine the final impulse.”—(Problems, Third, 99).

The following is authority to the point, given by Lewes: “In 1843 Griesinger—who appears to have known nothing of Dr. Laycock’s paper—published his remarkably suggestive memoir on *Psychical Reflexes* in which he extends the principle of reflexion to all the cerebro-spinal centers. The whole course of subsequent research has confirmed this view; so that we may say with Landry, ‘*L’existence du pouvoir réflexe dans l’encéphale ou dans quelques unes de ces parties établit une nouvelle analogie entre le centre nerveux crânien et la moelle épinière.*’ Indeed we have only to consider the laughter which follows a ludicrous idea, or the terror which follows a suggestion of danger,—the varying and involuntary expression of emotion,—and the curious phenomena of imitation and contagion,—to see how large a place cerebral reflexion occupies.”—(Phys. Basis, 454-5.) Again, Schiff in 1859, “thinks that so far from the actions of the cord being distinguishable from those of the brain by the character of ‘reflexion,’ and depending on the mechanical arrangement—*all* actions, cerebral or spinal—are reflex; all depend on a mechanical arrangement.”—(Phys. Basis, 459.) Huxley observes: “Descartes’ line of argument is perfectly clear. He starts from reflex action in man, from the unquestionable fact that in ourselves co-ordinate purposive actions may take place without the intervention of consciousness or volition, or even contrary to the latter. As actions of a certain degree of complexity are brought about by mere mechanism, why may not actions of still greater

complexity be the result of a more refined mechanism.”—(Cornhill Mag.)

The writer first met with this view in a little work published in 1863, and devoted exclusively to setting it forth: “Die Summe der aufnehmenden Geistesnerven nenne ich Vorstellungsorgan die Summe der bewegenden Geistesnerven nenne ich Willensorgan. Und wie durch die graue Substanz des Rückenmarks ein Reflexverhältniss zwischen den empfindenden und bewegenden Nerven, so wird auch durch die graue Substanz des Geisteshirns ein Reflexverhältniss zwischen den vorstellenden und wollenden Nerven vermittelt. Mit diesen Voraussetzungen werde ich versuchen das geheimnissvolle Getriebe der Geistesthätigkeit auf einfache, bekannte Kräfte zurückzuführen und die *Geistesthätigkeit* darzustellen als ein *Reflexthätigkeit*.”—(Piderit, Gehirn u. Geist, 45, 46).

Professor Bain observes that, “when the mind is in the exercise of its functions, the physical accompaniment is the passing and repassing of innumerable streams of nervous influence. Whether under a sensation of something actual, or under an emotion or an idea, or a train of ideas, the general operation is still the same. It seems as if we might say, no currents, no mind. The transmission of influence along the nerve fibres from place to place, seems the very essence of cerebral action.”—(Senses and Intellect, 66.) This dynamical view of currents in the brain, we may supplement with a passage from Dr. Maudsley explicitly to the point under consideration: “Reflection is then, in reality, the reflex action of the cells in their relations in the cerebral ganglia: it is the reaction of one cell to a stimulus from a neighboring cell, and the subsequent transference of its energy to another cell—the reflection of it.”—(Physiology of Mind, 120.) As these currents cannot be seen, there is no doubt much of hypothesis in such views, but they indicate very plainly the tendency of the best informed thought on the subject.

The last word which I am able to utilize for this section is that of J. Luys on the Brain and its Functions. Not only is

the fact of counter currents to and from the cerebral cortex recognized, but the road they travel is more distinctly pointed out than ever before. The impressions received from the outer world by the sensory nerves are carried to the optic thalamus, a small mass of gray substance in the center of the brain, and thence they are transmitted to the gray cortex of the cerebrum, whence they are sent on their return trip through the corpus striatum to the motor ganglions of the spinal axis to act on the muscular system. The afferent stream is no doubt modified by the optic thalamus on its way to the brain proper, and there modified again. The efferent stream is acted on by the corpus striatum assisted by the cerebellum, and thus fitted to play its part in adapting the organism to its outer conditions. The current begins at the periphery in relation to the external world, and it ends, for the most part, at the periphery in other relations to the external world. It is from first to last an instance of action and reaction.

SECTION 76.—Mental action might be defined as the response of an organized unit to the external forces which affect it. All phenomena are but the ever changing forms of adjustment. The unit of carbon plays between the objects of its attractions and repulsions, now drawn to and again driven away. And when it unites with other kinds of atoms to form molecules, the changes it undergoes are precisely those which are necessary to adapt it to surrounding objects according to the laws of its constitution. In like manner behaves the crystal; it takes on matter and grows; and in default of suitable particles in its vicinity, it ceases to grow; and if submitted to the action of certain forces outside of it, it may disintegrate. In chemical union, the affinity of each atom or molecule for its fellow is a mutual action between them, and in chemical dissolution by heat or electricity, the repulsion of each particle for another is equal and opposite. In the inanimate world, the entire series of changes is the adaptation of the unit to its ever changing environment. It is the constant play of action and reaction. The same is true of the animate world. The vegetable is the

response of an organic unit to the outside influences which affect it. No vegetable growth without moisture, heat, and light. The lowest animal form, however simple it may be, is but an organic unit in constant action and reaction with its external conditions. The amoebæ envelop organic atoms in an extemporized stomach, and thus live and grow. This response to external things for definite ends comes by repetition, in forms a little higher, to lay the basis for a nervous system. Reflex action, or the answer of the organic unit to stimulus from without, takes place in animal forms without nerves; and such answer is still the highest function of simple animals with nerves; and under all circumstances is it the response of the animal unit to the external world. A little higher in the scale instinctive action arises—its field of play still lying between the creature and its environment. And when the creature rises in the scale to rationality, the sum of its functional activities consists in response to the conditions of its life by cognition thereof and adaptation thereto. It is still action and reaction become constantly more complicated in ascending the biological hierarchy. This is the function of the simplest forms of reflex action, it is the function of instinctive action, it is the function of intelligence. "When we call a man or animal intelligent, we mean that he shows a readiness in adapting his action to circumstances; and he is more intelligent in proportion as he recognizes similarities amid diversities, and diversities amid similarities of circumstance, by these means guiding his conduct." —(Lewes). According to Herbert Spencer, "Every form of intelligence is in essence an adjustment of inner to outer relations;" and that is what instinctive action is, and what reflex action is, and virtually what molecular and atomic action is. We do not agree with Nägeli (*Nature*, October, 1877), in attributing feeling, sensation, inclination, pleasure, to molecules. Still it must be admitted that there is an analogy between the impulse under which a molecule moves and that under which the animal moves, which is very striking. The animal seeking pleasure and avoiding pain is very much like the atom or mole-

cule acting and reacting under the forces of attraction and repulsion. They are closely analogous, though not identical. The one is in a simple way very much what the other is in a complex way. Both remand us to the primary law of attraction and repulsion, and illustrate antagonism in the constitution of things.

SECTION 77.—Mind cannot advance a step in the acquisition of knowledge, but by determining likeness and unlikeness in the perception of objects. This is the work which mind is constantly doing in its higher as well as in its lower activities. "In the lowest conceivable type of consciousness—that produced by the alternation of two states—there are involved the relations constituting the form of all thought."—(Spencer). Mentality depends on the act of comparing one feeling or impression with another, and so determining their relations of likeness, difference, contrast, opposition. If all impressions received from without were alike, there would be no consciousness, no mind. It is the experience of their differences by transition from one to another that makes possible the conception of both object and subject, these being related as the poles of the magnet, each being absolutely necessary to the existence of the other. Without subject there could be no conception of object, and without objects there could be no conception of subject. All logical method, all mental activity as well as the physiological instrumentalities of mind involve certain necessary elements of alternation, contrast, opposition, antagonism.

SECTION 78.—Another form of mental antithesis entitled to a place in this chapter may here be noted. Looking long at a bright color becomes offensive, and the complementary color often takes its place without external cause. An emotion long continued may become painful, and react into its opposite. A mind that is easily elated is apt to be easily depressed. By contrast wit and humor often proceed from the saddest minds. The deprivation of freedom, or the suppression of desire involuntarily awakens visions of the opposite state. Outrage to a

feeling calls up its antagonist, and the intensity of love may add fuel to hatred, as when, in war, the sex that is most tender-hearted and devoted as a friend becomes the most implacable as an enemy. Without emotional contrast there would be no emotion, no enjoyment, on the admitted principle, that if all flavors were alike, there would be no flavor at all. Even masses of men pass from one extreme to another. The universal enmity which characterized primitive man, reacted into an exaggerated estimate of hospitality at a later age. The puritanism of one period passes into the licentiousness of the next. At one extreme is asceticism, at the other dissoluteness, as history shows. The attempt to establish virtue by repression is apt to lead to the opposite. Notwithstanding the stringency of the Scotch kirk, licentiousness and drunkenness prevailed in unusual excess among the Scotch people, apparently as an offset to pietistic repression. According to Plato tyranny grows out of the license of unrestrained freedom. The outburst of freedom which the English experienced under Charles the First, reacted under the restoration into a striking indifference concerning freedom and independence. The example, familiar to us all, of the alternation of mad speculation and extravagance with commercial depression and want, illustrate this same principle. The alternation of opposites in mental and moral phenomena, is but an example of action and reaction so familiar in the physical world; and the mind simply works in accordance with the habits of its development, now fixed as the law of its constitution.

SECTION 79.—There is an antagonism in mental functions like that which obtains between growth and reproduction, or between the physical and mental in man. Excessive development of the one term implies under development with relative weakness in the other. Strongly emotional natures are not noted for intellectual clearness; and a great intellect is usually accompanied with deficiency of emotion. It has been said that the great actors in the world's affairs are never deliberate thinkers. Their measures being promptly taken under a sort of intuitive impulse, they do not stop to weigh considerations. Emotion

and intellect, action and thinking are not absolutely antagonistic, but to some extent they mutually exclude each other. This is, however, to a certain extent true of all faculties which draw upon the same store of supply for the energy of manifestation; what one gets beyond its due share is deprivation to the rest.

SECTION 80.—Our mental constitution, however, does not lack for elements which are truly antagonistic in character. A list of the human passions and moods would bring this clearly into view. Joy and sorrow, hope and despair, cruelty and kindness, courage and cowardice, faithfulness and treachery, malevolence and benevolence, philanthropy and misanthropy, love and hatred, friendship and enmity, covetousness and prodigality, lewdness and chastity, virtue and vice,—and still more—in their simple and compound forms, a very long list. The language is rich in the names of passions and propensities which lead to discord and unhappiness, as envy, jealousy, suspicion, depression, sadness, despondency, melancholy, malignity, anger, revenge, lasciviousness, lust, and still many others.

The craniologists of the Gallian school, with all due deference to the prevailing prejudice concerning the essential harmony of all nature and the original innocence of man, treated the baser elements of the human character as “perversions:” whatever is not entirely compatible with the moral sentiments has been perverted from its original beneficent character. Dr. J. R. Buchanan, however, a craniologist of some originality, taught that the legitimate functions of certain tracts of brain were by their nature discordant and base. He divided the brain by a plane, above which the tendency of activity is upward, elevating, good; and below which it is downward, depressing, evil. Without endorsing this writer’s philosophy or methods, it is safe, nevertheless, to affirm that his doctrine concerning the characteristics of the passions and propensities, is much more philosophical than that of the Gallians and other optimists. We only know human nature by its manifestations; and when we see a mental quality like that of the destructive instinct in all the races of mankind, we must accept it as a normal constituent

of human nature. A strong feeling of benevolence or caution may suppress the manifestations of the destructive impulses, but that does not change their character. Just so far as they have any existence at all, they are destructive. And since mankind have in all ages given abundant expression to this propensity, not only using it on necessary occasions, but voluntarily making the occasions for its indulgence, it would be very singular if it did not now constitute a part of mental propension ingrained into the human constitution. If man had not been a destructive creature, he could have had no continued existence on this planet; and his present supremacy is due mainly to the fact that he has been the greatest of all destroyers.

Perhaps we should be puzzled to identify the conditions which have given rise to such passions as envy, hatred, revenge, etc., but it is not necessary that we shall. These are no doubt to a certain extent instances of correlated development, in which a useful and indispensable thing is necessarily accompanied by adjuncts of a kindred nature, whether with or without utility. The natural arms of animals for self-defense may be used for wanton and aimless attack. If military genius were content with order and peace as its end it would be a blessing, but it is only too apt in its madness for exercise to spread desolation at home and abroad. It is a paradox of endowment by uniform sequence that when there is enough for the end to be accomplished, there is quite sure to be at the same time a sporadic surplus.

No appeal can be made to the New Phrenology of Ferrier, Bastien and others. Its advances, slow and careful, have scarcely yet passed beyond the motor centers, localizing some of these, and admitting the general division of the cerebrum into an intellectual region in the frontal brain, a motor region in the middle lobes, and a sensitive region back of the latter, or interblended with other centers. It appears rather to eschew the division of the mind into distinct faculties, because, since mind is but the adjustment of inner and outer relations, the

a/

a/ faculties have gradually arisen in answer to constantly more complicated conditions of life, and do not, therefore, admit of distinct demarcations in a physiological system.—(Bastion, *Brain as the Organ of Mind*, 519). But we submit that this is precisely the way in which the different functions of the body have arisen, and yet they are as distinct as the organs with which they are associated. In a similar way, also, have species come into existence, and yet naturalists treat them as distinct, just as psychologists may treat the faculties of the mind. And if there are motor centers in the gray tissue of the brain, it is very likely that there are, also, sensitive and intellectual centers with which different kinds of intellection and different kinds of sensation, feeling, and emotion are especially identified. But, little is known of this, and I only refer to it in justification of the use herein made of distinct mental faculties.

SECTION 81.—The very faculties which give to man spirit and power for defense and attack as the means of maintaining his existence and extending his empire, require a certain measure of balancing, else they would run riot, and defeat the end in view. Hence there is in every sane individual of the race two classes of faculties whose impulses antagonize each other. The moral and intellectual nature must oppose the strain of the passions and propensities, else these would lead to inevitable disorder and ruin. But this contest is not within the individual only; it takes place between individuals, and thus becomes social. The same impulses which were against the better sentiments in the individual, are liable to come in conflict with like impulses in other individuals. Two persons much given to aggression would very soon encounter each other. So with groups; in their raids for sustenance, they would meet with other groups on common ground, and fight for the mastery. Every individual and every group seeking its own ends, could not but come in conflict with other individuals and groups. In such a state "private appetite" would be "the measure of good and evil," and Hobbes was right in regarding "the condition of mere nature" as "the

condition of war." It was the result of individuality seeking the satisfaction of its wants.

The discordant impulses in man are thus doubly antagonized, first, by the higher instincts in the same individual, and secondly, by the same discordant impulses in other individuals; and out of these conflicting elements of character arise the phenomena of moral control. Anger in one finds its limitation in the equal anger of another, and self-preservation renders mutual restraint necessary. In existing society, an individual who does not restrain his dangerous impulses, is himself soon crushed out of existence by an orderly power whose means of destruction are greatly superior to his own. The integrity of society is largely maintained by the balanced antagonism of like propensities in its constituents, and the moral control which grows out of it; just as the physical individual is kept erect by the balancing of antagonistic muscles under the unitizing control of the medulla oblongata.

But in society this balancing of the passions and impulses is a very complicated affair, even more so than the balancing of the meteorological elements. Equilibrium in either case never comes about. There is violence and discord in the elements, and vice and crime in society. To say that these are incidental and transitory is to ignore the plainest teachings of history and science. There are infinite forms of conflict in the physical and in the organic worlds; why should there not be in the mental and social worlds? Man's nature is the theater of conflict, because he has grown up in the midst of conflict, and has been molded by it. Man's mental and physical mold is what it is, precisely because it is the best attainable to resist the opposing forces which have pitilessly assailed him from the beginning till now. Man epitomizes within himself the antagonism which prevails in the sphere with which his experience has had to do. In this sphere conflict is ineradicable; therefore to extinguish the potencies of conflict in man would be to unfit him for his environment, and ensure his speedy destruction.

That there is passional antagonism within man, and between

man and man by the necessities of the human constitution is a fact so obvious that there would be no need of insisting on it, but for its relation to the leading idea of this treatise. The statement of it has often been made. Plato conceives of mind as a chariot drawn by a team of winged horses, one of which is good, the other vicious. The trouble is to get the horses to move along together; for one of them being of inferior nature, is liable, unless well trained, to force the vehicle out of its proper course, in spite of the driver. This, of course, implies that the lower propensities and present impulses are liable to have their way instead of the higher sentiments, with their remoter and finer gratifications. The philosophy of Combe's Constitution of Man which has had such widespread influence is built upon this conception. And even thus, Spinoza as given by Froude: "There are pleasures of sense and pleasures of intellect; a thousand tastes, tendencies, and inclinations form our mental composition; and since one contradicts another, and each has its tendency to become dominant, it is only in the harmonious equipoise of their several activities, in their due and just subordination, that any unity of action or consistency of feeling is possible."—(Brief Studies, 308). Pope sings it as follows:

"Love, hope, and joy, fair pleasure's smiling train,
Hate, fear, and grief, the family of pain;
These mixed with art, and to due bounds confined,
Make and maintain the balance of the mind:
The lights and shades, whose well-accorded strife
Gives all the strength and color of our life."

It is stated in a more general way by Rousseau: "En méditant sur la nature de l'homme j' y crus découvrir deux principes distincts dont l'un l'élevait à l'étude des vérités éternelles, à l'amour de la justice et du beau moral, aux régions du monde intellectuel, dont la contemplation fait les délices du sage; et dont l'autre le ramenait basement en lui-même, l'asservissait à l'empire des sens, aux passions qui sont leurs ministres, et contrariait par elles tout ce que lui inspirait le sentiment du premier."—(Emile, 329).

Guizot observes in his Lectures on the General History of Civ-

ilization (pp. 117, 118) that, "Events are not so prompt in their consequences as the human mind in its deductions. There is in all things a mixture of good and evil, so profound, so inseparable, that, in whatever part you penetrate, if even you descend to the lowest elements of society, or into the soul itself, you will there find these two principles dwelling together, developing themselves side by side, perpetually struggling and quarrelling with each other, but neither of them ever obtaining a complete victory, or absolutely destroying its fellow. Human nature never reaches to the extreme either of good or evil. It passes, without ceasing, from one to the other; it recovers itself at the moment when it seems lost forever. It slips and loses ground at the moment when it seems to have assumed the firmest position."

It is given by Buckle as follows: "Of the different passions with which we are born, some are more prevalent at one time, some at another; but experience teaches us that, as they are always antagonistic, they are held in balance by the forces of their own opposition. The activity of one motive is corrected by the activity of another."—(*History of Civilization*, I., 163). "The actions of individuals are greatly affected by their moral feelings and by their passions; but these being antagonistic to the passions and feelings of other individuals, are balanced by them."—(165).

SECTION 82.—The will is itself a theater of conflict. Whenever an animal elects to do one of two or more possible acts, there is conflict, however feeble and obscure, in the determination of the will. The strongest immediate impulse, to whatever that strength may be due, will determine the action. It is just the same further on in the scale. The influences which act in determining the will greatly multiply and become more complicated as we rise into the higher regions of mind. The strong impulse in prospect of immediate gratification does not now always carry; the impulse or motive of long range which was totally unknown lower down in the scale acquires great weight. The happiness in view may now be put off till later in

life or even till the next life. The act of willing would be greatly modified and exalted by such a consideration. But under the highest moral and religious guidance, it is still true, that the strongest impulse determines the will. Hartley said : "The *will* appears to be nothing but a desire or aversion, sufficiently strong to produce an action that is not automatic, primarily, or secondarily. . . . The will is, therefore, that desire or aversion which is strongest for the present time." "Which mental mood," adds Bastion, "is to prevail is sometimes immediately settled, and at other times only after a process of deliberation, and concerning this process, Hobbes says: 'The whole sum of desires, aversions, hopes, and fears, continued till the thing be either done or thought impossible, is what we call deliberation.'"—(Brain Organ of Mind, 551, 552). If "immediately settled," there is little conflict and it is soon over; deliberation is the prolonged conflict of counter-considerations, which the ultimate determination of the will closes.

CHAPTER XII.

CONFLICT AS A FACTOR IN MORALS.

SECTION 83.—Before life was on the planet there were no biological laws; in like manner, before the existence of society, there were no moral laws. The existence of society implies a certain degree of order, and order implies system, and system in society implies moral government. Then whence came society? Very largely out of the association which comes of conflict. The battle of life determines whether an animal with certain needs shall be social or solitary. Utility presides over the result, and battle determines it. Birds and beasts of prey mostly live alone and hunt alone; it is easiest thus to satisfy hunger and live. Hawks, eagles, owls, lions, and many others succeed best on the lone hunt, and their habits are solitary. Pelicans help one another by fishing together; wolves attack large prey, and they hunt in pairs or packs. Birds and animals which feed in flocks and herds assist one another in discovering enemies, and even in self-defense against them. They sometimes place sentinels, and sometimes the stronger ones give battle to the enemy.

But conflict relates not merely to the contest with other creatures for prey, or to avoid becoming prey. It is not altogether figurative that life has so often been called a battle. Every creature that lives has to maintain a struggle with the fatalities of life, or else be overcome in the struggle and die. Especially does this appear in taking care of the young. The young must be protected against the inclemencies of the weather, and against living enemies, and they must be fed at whatever cost. In all this there is struggle, and being thus compelled by the exigencies of life to remain together for a certain period of time, there is incipient habit formed, which, if not thwarted by other exigencies of life of opposite tendency, persists, and the animal

becomes gregarious and social. If in addition to this, it succeeds better in company than alone in procuring subsistence, it is sure to feed in company with its fellows, and it becomes so habituated to the presence of its kind, that it is uneasy and discontented when alone. "The perception of kindred beings, perpetually seen, heard, and smelt, will come to form a predominant part of consciousness—so predominant a part that absence of it will invariably cause discomfort."—(Spencer.) Thus originated the social habits of animals; and all social animals have what corresponds to the moral status of society in the form of regulation and order. "All animals living in a body which defend each other or attack their enemies in concert, must be in some degree faithful to each other; and those that follow a leader must be in some degree obedient."—(Darwin.) The valiant bulls or baboons which come to the defense of the weaker members of the herd or troop, perform an action at their individual risk, which redounds to the good of the society; and among mankind such actions are called moral. If through the cowardice of some of those natural defenders of the troop or herd, the defense had proved too weak and let in the ravages of the enemy, that dastardliness of behavior would be clearly immoral. The good to the community from a general line of conduct on the part of individuals, establishes that conduct as commendable and meritorious; and in any instance the lapse of such conduct would be moral recreancy resulting in injury to the community. The impulses which cause animals to stand at bay are simply those of self-defense, which have arisen out of individualism and the conflict which attends it. If, in the case of any troop or herd, the battle-givers were always overcome, they would cease to offer resistance, and would always run, leaving the less fleet to be taken. Whatever the habits of living things in this respect, whether of flight or battle, utility determines the habit. A very little intellectual endowment enables creatures to determine the situation, and to adopt such course as is best for the community. Birds on solitary islands, unused to sportsmen, are not afraid of them, but they would very soon learn to be. A

flock of domestic fowls are not afraid of a man with a gun if he never shoots any of them ; but if he fires two or three times and kills, the survivors will always take to flight whenever they spy him gun in hand. Among all gregarious animals, the notice of danger, whether by noise or action, or both, is that upon which the good of the community largely depends, and which has to such community a moral value. And all these mutual relations concerning safety and well-being, whether we call them moral or not, grow out of the conditions of conflict in which the species is placed.

SECTION 84.—Within their own communities without regard to external friends or enemies, social animals have their social order largely determined by contests of strength and cunning. The males determine by battle which are to be masters, and the strongest and most alert thereby largely secure a monopoly of the parental function. After defeat the weaker usually accept the situation, and with all proper deference concede the assumed rights of their superiors. Even the females have their battles to determine which shall have precedence at the watering trough or common rack. And once conflict has settled the question of precedence, the terror of the law secures its own observance. Out of all this grows a certain degree of order in gregarious communities by the deference of the inferior to the superior. It is a consequence of experience. Not to observe it brings pain ; obedience to the law avoids pain. Thus the most incipient form of order in community, of which we know anything, grows out of various forms of conflict, and is simply action in the direction of least resistance.

SECTION 85.—When animals become domesticated and have to do with man, their relations become very much more complicated, thereby adding to the rules which govern conduct. If an ox attempts to gore his master or his master's horse, a cow to kick the milkmaid, a dog to snap at the children or worry the sheep, a goat to butt the passer-by, a horse to kick, bite, or balk, or any animal to jump over or break through fences, so

far they are all wanting in the proper orderly or moral quality, and there is discord in their relations with one another and with man. How is it that animals inclined to be unruly are made sufficiently orderly to behave in a becoming manner? First of all it should be shown by kind treatment that we are their friends, to disarm hostility and awaken sympathy. An animal is precisely like a man in this respect. Convince him that we mean well toward him, and we shall get along with him better than if we treat him in an ungentlemanly way. But some animals like some men do not fully appreciate kindness. Some savages interpret kind treatment as evidence of fear; some horses take very much the same view of it. I have heard a farmer say to illustrate the human frailty, "they are like some critters; they don't know when they are well off." In such instances then, what is to be done? Very often the only method is to make disorder or immorality painful. Morality is established by the fact that "the way of the transgressor is hard." Allow me to illustrate:

"Uncle Sam" had seen service in the army, and bore upon his shoulder the honorable "U. S." After the war he took to farming like many another of his kind. Just lately he had been shifted from his usual stall to another, next which stood a cow with only a short partition between. Sam may have taken umbrage at this as an indignity; anyway, he backed down on his stable companion, and compelled her to keep close in the corner of her stall for safety. "One morning," said his keeper, "as I stepped up behind bossy, Sam let his heels fly, and they just reached my left shoulder. If I had been two feet closer, the blow would have sent me whirling—may be into eternity. I suddenly reached for a piece of board, and now it was Sam's turn to shrink himself into the smallest possible compass and hunt a corner. He was so conscious of deserving all he got that he made no resistance, and I shortly brought the chastisement to an end. Sam had kicked at me supposing it was his neighbor, and I now expected him to look out for me, but still to keep up his persecution against her. But in a day or two, I

observed that she would back across his stall and almost rest against his heels with safety." Sam was wise in his way, and of general good moral character, and this one experience of suffering for misdemeanor had sufficed to bring him back to his former course of general good behavior.

The following from "3758" (*Atlantic Monthly*, January, 1880), further illustrates this principle: Caleb is made to say, "There's that Zeke; he's as hefty a beast to manage as I ever laid eyes on. But Thomas has the right kind o' notion; as long as a creatur's green and blunders from not knowin' any better, he is as gentle as a girl. But if they are ugly and chock full of malice, then he shows 'em who is master. But it is merciful in the long run;" and he goes on to give details wherein it is shown that the animal behaves better because he finds out that good behavior saves painful experience. And further, "Caleb had occasion to chuckle more than once at the clever way in which Thomas led a refractory steer or colt in the paths of wisdom, until he became a gentle and well-trained animal." And then Thomas is made to tell his betrothed how he managed a yoke of balky steers on the conflict principle, and he declares "it had the desired effect in toning up their morals, so that they did not soger [balk] any more."

The training of pointer dogs illustrates the same view. If the novice violate the code pointer, he is made to suffer till he learns that the breaking of rules always fetches up in disappointment and pain, and that self-restraint and obedience bring the greater balance of pleasure in the long run. This affords a very apt illustration of the conflict which the maintenance of good morals always implies. It is always a victory, and often a victory after a hard fought battle with the passions. It is the restraint of an immediate impulse for a remote gratification. The young pointer is burning with eagerness to break for the game, but if he does he spoils the work, and is made to suffer for it; if he exercises the necessary self-restraint, and the game is

secured, a burst of happiness unalloyed with pain is the full reward of his virtue.

The intelligent watch-dog will not touch his master's stores, but bide his time for his proper share and reward. It comes of experience which finds treachery and theft painful, and faithfulness and honesty pleasurable in the end,—not the experience of one animal only, but of his ancestors of many generations. Self-restraint is less painful than the penalty of violated law; the cost of right-doing is less than the cost of wrong-doing; and intelligent animals very soon learn this; and such use of intelligence is one of the necessary elements of virtue in its simpler and more common forms. There is a subtlety of inference in the intellects of many species of animals, which is little suspected by those who are not familiar with their ways, or who are prevented from understanding them by a prejudice which assumes a necessary qualitative difference between brute and human intelligence. This subtlety of inference reaches to somewhat remote as well as to present consequences. The rooks which banish or kill one of their number that persists in stealing after the infliction of lighter punishments; the birds which distinguish between an armed and an unarmed man, and also between the bow and the rifle in the hands of enemies (Livingston); the arctic foxes which cut the twine (and then take the bait) which else would fire the gun and kill (Ray); the terrier which called his mistress' attention to the cat's theft in another room, restraining meanwhile his own impulses to take the beef-steak from the offender for his own use;—these and previous examples of this section go to show the subtlety of inference and the rudiments of self-control in birds and animals which are by no means highest in the scale of intelligence. A writer in the *Quarterly Journal of Science* says concerning the behavior of the terrier in the last example given: "It is as clear a case of self-determination—of appetite and passion governed by the will—as any which human biography can show." That animals may hold their immediate impulses in abeyance in view of remoter ends, no one acquainted with their actions can, for a

moment, doubt; and this control of immediate impulses for remoter ends is, in man, one of the essential conditions of morality, without which human society would not be possible.

SECTION 86.—Illustrations of the influence of painful and pleasurable feeling in determining the behavior of animals might be given almost without limit, and I may not have selected the best; but those given will be sufficient to show the play of antagonism in bringing about orderly or moral conduct in the lowest forms of society. What is true in this respect of animals, is true in a much more complicated way of mankind. There are different and conflicting classes of feeling, and in the determination of conduct, one class or the other must prevail. "We have seen," observes Herbert Spencer, "that during the progress of animate existence, the later-evolved, more compound, and more representative feelings, serving to adjust the conduct to more distant and general needs, have all along had an authority as guides superior to that of the earlier and simpler feelings—excluding cases in which these last are intense. This superior authority, unrecognizable by lower types of creatures which cannot generalize and little recognized by primitive men, who have but feeble powers of generalization, has become distinctly recognized as civilization and accompanying mental development have gone on. Accumulated experiences have produced the consciousness that guidance by feelings which refer to remote and general results, is usually more conducive to welfare than guidance by feelings to be immediately gratified. For what is the common character of the feelings that prompt honesty, truthfulness, diligence, providence, etc., which men habitually find to be better prompters than the appetites and simple impulses? They are all complex, re-representative feelings, occupied with the future rather than with the present. The idea of authoritativeness has therefore come to be connected with feelings having these traits; the implication being that the lower simpler feelings are without authority. And this idea of authoritativeness is one element in the abstract consciousness of duty."—(*Data of Ethics*).

This recognizes the conflict between two classes of feelings, and defines which class should direct conduct. The more complex feelings having reference to future gratification should prevail over the simpler feelings which are concerned only with the present; that is, regulated conduct is preferable to random conduct. The guiding principle of well regulated life was finely stated in a somewhat old-fashioned way, about a century and a half ago, by Francis Hutcheson: "The chief happiness of any being must consist in the full enjoyment of all the gratifications its nature desires and is capable of; or if its nature admits of a variety of pleasures of different and sometimes inconsistent kinds, some of them also higher and more durable than others, its supreme happiness must consist in the most constant enjoyment of the more intense and durable pleasures, with as much of the lower gratifications as consists with the full enjoyment of the higher. In like manner, if we cannot ward off all pain, and if there be different kinds and degrees of it, we must secure ourselves against the more intense and durable kinds, and the highest degrees of them; and that sometimes by bearing the lower kinds or degrees, or by sacrificing some smaller pleasures, when 'tis necessary for this end."—(*Moral Philosophy*, Vol. I., 100).

This recognizes the highest happiness principle and states the ground of its application. Further on he insists on the manifest inconsistencies among even the higher pleasures, and their incompatibility in the fruition; and affirms that some of them are much increased by the consciousness of having sacrificed the lower to the higher. Earlier in the volume (pp. 12, 13), he presents an array of conflicting tendencies in human conduct: "The difference between the calm motions of the will and passionate, whether of the selfish or benevolent kinds, must be obvious to any one who considers how often we find them acting in direct opposition." Anger and lust, he continues, draw one way, and a calm regard for some interest or our own good will draw the opposite way. A passion may conquer a calm principle, or be conquered by it. Some motive will prompt to spend-

thrift expenses, while another will protest against the extravagance. In sending off a child or friend at some risk for improvement, one class of faculties is gratified and another made uneasy. In correcting children, putting restraints upon them, or setting them uneasy tasks, the parent is actuated by conflicting feelings. The love of life overcomes our repugnance to abstinence, painful cures, nauseous potions.

A passage from Shaftesbury, who is utilitarian in his views of morality, is fairly modern in its method of pointing out the need of restraint to secure the proper balance of the passions: "Whoever is the least versed in this moral kind of architecture, will find the inward fabric so adjusted, and the whole so nicely built, that the barely extending of a single passion a little too far, or the continuance of it too long, is able to bring irrecoverable ruin and misery. He will find this experienced in the ordinary case of phrensy and distraction; when the mind dwelling too long upon *one* subject (whether prosperous or calamitous) sinks under the weight of it, and proves what the necessity is, of a due *balance* and counterpoise in the affections. He will find that in every different creature and distinct sex, there is a different and distinct order, set, or suit of passions; proportionable to the different order of life, the different functions and capacities assigned to each. As the operations and effects are different, so are the springs and causes in each system. The inside work is fitted to the outward action and performance."—(Characteristics, II., 135.) This, in the moral sphere, we think must be accepted as a clear anticipation of the modern doctrine in the organic sphere that life, feeling, intelligence are the adjustment of one set of relations to another, the inner to the outer.

Professor Archibald Campbell, of Edinburgh, who early in the last century took Hobbes and Mandeville to task, hitting aside of the one and yielding to the other more than he imagined, reduced the several affections of the mind to either hatred or love, and affirmed "that all our actions, of whatever sort, do originally spring from one or other of these two principles." He settles the strife between self-love and other-love as follows:

"And therefore matters thus far do by no means depend upon arbitrary will or humor, but are fixed, eternal, *unchangeable*: which gives us plainly to understand, that if ever we expect to have the favor and commendation of those beings with whom we are joined in society, we must necessarily adapt our behavior to the gratification of their self-love, or their natural desire of well-being. This is the method we must needs take; and there is manifestly no other course whatsoever, that can at all serve our purpose."—(Enquiry into the Original of Moral Virtue, 103, 104). The author then goes on to state his scheme of moral duties, which is throughout utilitarian and altruistic. This virtue of the renunciation of self in the interest of self is more artistically presented by a modern writer on Moral Science, Dr. L. P. Hickok, already quoted on Cosmology. "The animal [in man] is impelled by a craving, the rational is inspired by a claim. The difference between these two is very broad. A craving is always going out towards something it can get, a claim is always going out towards something it can give, or can be. A craving seeks a self-gratification; a claim requires a self-surrender, perhaps a self-sacrifice. The self which the craving seeks, is not found, but is lost in the very process of its seeking; while the self which the claim surrenders, is not lost, but is found in its very surrender."

G. H. Lewes: "No one supposes that our *desires* are free. Such freedom as there is consists in the conflict of desires, and the choice is determined by the predominance of the most urgent; and this predominance is partly due to the strength of the immediate stimulus, and partly to the vision of possibilities and consequences which the desire awakens. It is here that desire passes into volition; so that, however powerful a stimulus may be in exciting a desire, if it be connected in experience with painful consequences, we are thereby educated to resist the desire, or to avoid incurring the stimulus which awakens it. Because the will is thus the abstract expression of the product of experience, it is educable, and becomes amenable to the moral law, as architecture is amenable to mechanical laws, and

as thinking is amenable to knowledge.”—(The Study of Psychology, 109). This is bringing the subject largely into the domain of physiology, and it is possible to go still further in this direction. A writer in the London Times speaks of a true volition which is “capable of great development in two different directions—first, as an inhibitory power, to restrain either reflex or sensorial or ideo-motor impulses from going out into action—to hold the machine of the body still in spite of them; secondly, as a selecting power, to retain certain ideas before the consciousness to the exclusion of others, to ‘dwell’ upon them by deliberate choice, and thus to derange the balance of mere experience, and to give to the selected ideas an increased weight in determining the conduct.” “With regard to the first of these points, it is necessary to revert to the account already given of the difference between sensori-motor and ideo-motor action, and to show that, as it is the natural tendency of an undeveloped nervous system to perform the humbler rather than the higher function, to allow impressions made upon the sensorium to expend themselves in sensori-motor action rather than to pass on through the sensorium and to excite ideas, it should be the constant endeavor of the educator to overcome this tendency, and so to direct and reiterate the impressions made by teaching that ideas should in time become their habitual results.”

George Pouchet in the *Revue des Deux Mondes*: “Between the currents ascending the spinal cord and those going out from the brain the conflict may be said to be permanent. There is an antagonism, an almost constant struggle for influence, between the two centres, the one the seat of the higher faculties characterizing animal life, the other ruling the functions of vegetative life. It is this which moralists have called, in reasonable enough terms in this case, the spirit and the flesh. The only inquiries of philosophers into the mechanism of our passions which have any importance belong to the account very often given already, of these relations between the moral and the physical. Physiologists in their turn study and verify that antagonism, without, however, explaining it any better than

moralists or philosophers have done, while still seeking for the precise seat. Sometimes it occurs that currents coming from the spinal cord conceal, thwart, or destroy those that flow down from the brain, and sometimes the reverse happens."

These several views from writers of the last two hundred years go to show how varied the views of thinking men may be in regard to the conflict of higher and lower feelings in determining conduct, and yet, how all agree substantially concerning what feelings should obtain and hold the mastery. Whether the method of looking at the subject be metaphysical, psychological, or psycho-physical, it has essentially the same result. The living of a worthful life assumes the form of a triumph after conflict between two classes of faculties which are liable to antagonize each other. A member of society who yields to unrestrained impulses is regarded as a character that is "unbalanced." Virtue implies the constant maintenance of the required balance, and consists in the regulation of conduct on principle. Life is exalted when it secures self-interest through justice to others and promotes the interest of others through justice to self.

In all cases of conflict between the selfish interests of the individual and the general interests of society, the former is by a natural law of force subordinated to the latter, and for this reason that it secures a larger balance of happiness in the aggregate; and herein obtains the paradox, that, in waiving personal considerations, the individual is most surely subserving personal interests. A part of the Commandments are founded on this principle. The coveting of whatever is rightfully another's serves the individual's pursuit of happiness far better in the renunciation than in the gratification. The existence of society is incompatible with the unrestrained gratification of the desires. Hence, the good of the individual as of society is best found in the rigid observance of the moral law. It is the balancing of motives and acts, in which the more remote and greater outweighs the more immediate and less. *That* is the greater because it involves only self-denial which is itself a form of vic-

tory imparting pleasure ; while *this* is the less because it provokes hostility and brings pain equal to and often greater than the gratification. The one leaves a margin in favor of the individual, the other does not.

SECTION 87.—A great many attempts have been made from ancient times till the present to find the leading element of morals, that which comprehends all the rest and reduces them to order. Propriety, prudence, benevolence, or altruism, sympathy, balance of the passions, the due medium, the golden mean—all have at one time or other, or place, been pushed to the front, and all have a certain truth in them, but it is not till we reach the conception of utility as measured by the outcome of the greatest happiness that we have in hand a principle which assumes the mastery and co-ordinates all the rest into a well-balanced system. But utility derives its importance from the conflict among impulses, passions, faculties, which it is the function of the guiding principle to adjust. In all times, whatever gave offense to society and created pain was placed under ban as immoral ; that which brought good and gave pleasure was commended and retained as a component part of the moral system. In this way, through the play of good and evil, pleasure and pain, has been determined the proper balance of conduct, the due medium, the mutual adjustment of egoism and altruism—that coming to be regarded as meritorious which usually promotes the interest of the greatest number or those having the greatest power. Every writer on morals recognizes the doctrine of utility, even when he disavows it. Curious examples might be given of this. It is Hume who says that, whatever the principles writers set out with, they are sure “to assign as the ultimate reason for every rule which they establish, the convenience and necessities of mankind ;” and that, “a concession thus extorted, in opposition to systems, has more authority than if it had been made in prosecution of them.”—(General Principles of Morality).

The greatest happiness principle necessarily concerns the individual as well as society, and utility actually determines the

conflict of jurisdiction between the two. And in general it may be said truly that there is nothing adjusted in society any more than in the physical world, but through stress—the action of one thing upon another. The physical forces, the written laws of the state, and the unwritten laws of society act and counter-act to shape the life of man. J. Fitzjames Stephen called it “compulsion,” and puts the case heroically and soundly: “It seems, then, that compulsion in its most formidable shape and on the most extensive scale—the compulsion of war—is one of the principles which lie at the root of national existence. It determines whether they are to be and what they are to be. It decides what men shall believe, and how they shall live, in what mould their religion, law, morals, and the whole tone of their lives shall be cast. It is the *ratio ultima* not only of kings, but of human society in all its shapes. It determines precisely, for one thing, how much and how little individual liberty is to be left to exist at any specified time and place.”—(Liberty, Equality, Fraternity, 169). Whatever the outcome, it is a case of stress in the dynamics of society. The universe is sustained by a constant stress or opposing strain—this is the doctrine of physics; so morality is sustained by a like tension or pressure. Whenever order exists, whether among atoms or molecules, or among the lower orders of living things, or among men, there is a balancing of opposing tendencies, and order is the result of compulsion.

SECTION 88.—We do not, of course, positively know what the original condition of human beings was. That they were social in simple fashion is no doubt true. Little groups—gens, clans, or households—appear soon to have sprung up and to have become closely united in a common interest. This was made necessary by the hostile attitude they were compelled to assume for self-preservation. Some of the beasts were much stronger than themselves and by nature better armed; while other groups with the idea uppermost of serving their own ends would not stop to weigh questions of right. Might and cunning were the available means of success, and success made

right. These primitive groups would very early develop the germs of moral qualities which would easily and naturally enough be advanced by primitive reflection to the requirements of primitive life. "Any animal whatever endowed with well-marked social instincts, would inevitably acquire a moral sense or conscience as soon as its intellectual powers had become as well developed, or nearly as well developed, as in man."—(Darwin, *Descent of Man*, Vol. I.).

SECTION 89.—Courage and loyalty would be the first virtues to be universally honored, and cowardice and treachery the first crimes to be universally execrated. It is obvious enough why this should be so. If a group of hunters get into a dispute with another group for the possession of certain game, the group whose members should stand best by each other, would be most likely to get the prize. Any cowardice, any treachery would put in jeopardy not only the prize contended for, but the very lives of comrades. Precisely the like might befall in a contest with a ferocious beast. The virtues of courage, of fealty to friends, would give the advantage to the group in general, and it would not only hold its own, but would gain strength by the successes of life, and exterminate, drive away, or swallow up such as were wanting in these virtues. The approval and praise of the brave and faithful and the condemnation of the cowardly and treacherous would fix these moral impressions on the minds of the young, so that there would come at length to be no deviation from them under any circumstances, either in thought, feeling, or action. Hence, in battle death would be preferable to running away. Prisoners would lose their lives, as they have often chosen to do, rather than betray their people. Those writers who find in such examples of heroism unanswerable proof of a mysterious moral instinct divinely implanted in the human heart, have taken only a superficial view of the genesis of this instinct. History shows how it was implanted and reinforced by utilitarian methods. Among the Romans it was death for a soldier to desert his post or to lose his arms in battle. It was an

early custom to decimate commands which fled from the enemy. One out of every ten determined by lot had to die. Even in later times this penalty was sometimes inflicted. The immediate advantages of cowardice were thus fatally cut off. The individual was submerged; it was the utter despotism of corporate opinion and corporate interest. Such moral and physical discipline had a psychological result in building up the heroic frame of mind in masses of men, who, in consequence, never quailed in the presence of danger. Cicero declares, "Whole legions of our troops have frequently marched with undaunted courage and even alacrity, to attacks, from which they were well persuaded not one of them could live to return." (And the Romans had an uninviting sort of life hereafter to look forward to). In Spain in the time of Sertorius, it was the custom when a chief fell, for his bodyguard to die with him. This was not unusual in early warlike times; it was the custom among our own ancestors. No stronger proof could be afforded of the high value which was attached to fealty of comrades in the midst of mortal combat. If any fell short of the requirement they were made to suffer moral and physical pain, so that the observance of the virtue was pressed by considerations which were mainly utilitarian. In the dilemma of two evils however selfishly viewed, that one was chosen which resulted in the less pain. Such feelings and actions descending from generation to generation became fixed in the mental constitution as a fundamental element of it, so that in any particular emergency, it becomes unnecessary to weigh considerations in order to determine conduct. It is no longer necessary to use conscious induction from experience to ascertain the principle of right action; the principle is at hand, and the actor carries it with him as a deductive truth which is applicable to every emergency. Savages whom we affect to despise illustrate this for us, when, as prisoners, they will not betray their comrades. Deep down in their instincts gentile or tribal fealty is recognized as the duty paramount to all others, and as a principle worthy to govern conduct, they carry it logically and loyally to death. They could

not give an account of its origin, and they could not philosophize about its use; it often seems adverse to the immediate interest of the individual, but it is so fixed in the mental constitution by the force of education and heredity, that the alternative of disobedience comes not into consciousness. Thus were duty and obligation established in the human constitution long before men were able to philosophize, even falsely, about their origin.

SECTION 90.—There is need that this view be made as emphatic as possible, it is so generally ignored. Our first witness shall be Herbert Spencer, who has conceived the principle with clearness and presented it with force: "To make my position fully understood, it seems needful to add that, corresponding to the fundamental propositions of a developed moral science, there have been and still are, developing in the race, certain fundamental moral intuitions; and that, though these moral intuitions are the results of accumulated experiences of utility, gradually organized and inherited, they have come to be quite independent of conscious experience. Just in the same way that I believe the intuition of space, possessed by any living individual, to have arisen from organized and consolidated experiences of all antecedent individuals who bequeathed to him their slowly-developed nervous organizations—just as I believe that this intuition, requiring only to be made definite and complete by personal experiences, has practically become a form of thought, apparently quite independent of experience; so do I believe that the experiences of utility organized and consolidated through all past generations of the human race, have been producing corresponding nervous modifications, which by continued transmission and accumulation, have become in us certain faculties of moral intuition—certain emotions corresponding to right and wrong conduct, which have no apparent basis in the individual experiences of utility."—(Letter to Mill, *Data of Ethics*, 123.)

The following from G. H. Lewes, while less abstract than the preceding, brings out distinctively the conflict element which is

concerned in the genesis of this "form of thought" in the sphere of morals: "We train our domestic animals as we train our children, to do this and avoid that, by expressions of approbation and disapprobation, which represent caresses and blows; and so far we find them impressible and educable by the moral instrumentality which, in its gradual action on man, has incorporated itself as custom, law, and public opinion. . . . But in less endowed specimens of our race, even within the reach of culture, the response to the moral demands of society, whether in the shape of doctrine or of institutions, is little more than the conflict of opposing appetites, the check imposed by egoistic dread on egoistic desire. It is a great progress beyond this brute dread of the stick when the love of approbation attains the ideal force which renders social rule or custom and the respect of fellow men an habitually felt restraint and guidance."—(*Study of Psychology*, 145.) "And this observation leads us to the striking antithesis presented in the progress of mankind; namely, that the moral sense, which, in the first instance, was molded under the influence of an external approbation and disapprobation, comes at last in the select members of a given generation, to incorporate itself as protest and resistance, as the renunciation of immediate sympathy for the sake of a foreseen general good, as moral defiance of material force, and every form of martyrdom."—(146-7.) This doctrine of the formation of moral intuition through the discipline afforded by pleasure and pain in the experiences of life, appears to be distinctly recognized by Shaftesbury in the following passage: "Yet the same master of the family using proper rewards and gentle punishments, rewards his children, teaches them goodness, and by this help instructs them in a virtue, which afterwards they practice upon other grounds, and without thinking of a penalty or bribe."—(*Characteristics*, II., 65.)

Like every conception of value, this also has had its origin and development, and it has its history. Faint glimpses of it were seen by Aristotle and the Epicureans. Locke's association of ideas suggested the association of feeling, through which vir-

tue on the basis of experience comes to be prized for its own sake rather than for what it secures. Hutcheson anticipated the doctrine, a clergyman, Gay, stated it distinctively, and Hartley more fully elaborated it. The account of its historical development from its germs to its maturity is given in his *History of Morals* by Lecky (Vol. I., 23-28), who calls it Hartley's Doctrine of Association.

No principle more than the abnegation of self under motives of duty, has been used to point the divine mystery of the moral instincts. Yet, while this principle is so well exemplified in man, it finds apt illustration farther down the scale of intelligence. The pointer sometimes exemplifies habits of self restraint the first time he is taken afield. There is nothing mysteriously divine about this. It was born with him by inheritance from the mental habits formed in his ancestors by the pains and pleasures of experience. And so firmly are such habits set in the mind of the creature, whether animal or human, that they act by rule; and so rigid is the rule that it is often unconsciously carried over into exigencies where it does not properly belong. "General rules are often extended beyond the principle whence they first arise."—(Hume.) It is amazing that the rise and application of moral principles involving the abnegation of self and the heroism of virtue should be enveloped in a haze of mystery in order to divorce them from all considerations of utility and bring the only rational account of the moral instincts into discredit.

SECTION 91.—Courage and loyalty are virtues esteemed at once for greater worth than they could have been as merely egoistic virtues. A social virtue carries its authority by reinforcement through the plurality of interests over that of the individual—though, indeed, there cannot be a personal virtue divorced from its social relations.

When one man abandons his comrades in the last resort of a deadly feud, they may be overcome, and all may perish. The interests of the many outweigh the interests of the one; hence,

the odium of cowardice and treachery, and the glory of courage and loyalty.

Then, in modern times and among the civilized, no character, no soldier. The success of an army depends on thorough discipline. But what is discipline? Simply that direction of habit which establishes confidence between man and man.—(Darwin.) Discipline secures the loyalty of one to all, and of all to each, for the good of all. Hence, in the army in times of danger, every considerate man takes the side of authority, if at all reasonable in its exercise, whenever it is resisted, or even questioned. The base character cannot be disciplined; he is not capable of entertaining the considerations, or of acquiring the habits which antagonize cowardice and treachery. The desperadoes of our cities made the poorest soldiers in the late Union army. Control and discipline could not be made fully to overcome their native infirmities of character, and such were apt to desert their comrades in the hour of need. They had lost the better instincts of the savage who stands unswervingly by his comrades in any peril.

The courage which men get credit for in valiant fight is a very compound quality of character. Wellington is reported to have said: "Give me an army of cowards." The intelligent man of character makes the best soldier, even though he frighten at first. Cromwell understood well enough that men having the most character made the best soldiers; his "ironsides" were yeomen in society and independent in religion. The execration of cowardice has no terrors for the characterless man; he fears bullets more than disgrace. He is out of balance, lacking offsetting qualities which sustain manliness. The man of character has these, and fear he ever so, he does his duty. He may not think in detail of the cause at stake, of his comrades in arms, of his friends at home, of his own good name, of his future; but by all these is he influenced, and however strong the impulse to save himself by flight, he is not the dastard so to act. He stands to his post, and in so doing, chooses what by the common consent of mankind is the better part. Patriotism and

the nerve it requires have become through inheritance an organized part of manly being. The virtue of courage, all along esteemed the highest in man, has come through discipline in the direction of greatest need. And it matters not what the convictions about other things. A man may be manly contemn he ever so the dogmas. It is character makes the man, and depth and energy of conviction that makes the hero. And in these there is nothing factitious—they are formed and ingrained into the constitution by the trying experiences of life, till they become forms of thought and feeling ever present for the guidance of conduct.

There is a passage in Tacitus which is suggestive in this connection. Speaking of the ancient Germans he says: "Punishments are varied according to the nature of the crime. Traitors and deserters are hung upon trees; cowards, dastards, and those guilty of unnatural practices are suffocated in mud under a hurdle. This difference of punishment has in view the principle, that villainy should be exposed while it is punished, but turpitude concealed. The penalty annexed to slighter offences are also proportioned to the delinquency." (*Note*:—"Among these slighter offences, however, were reckoned homicide, adultery, theft, and many others of a similar kind.")—(Hist. 301-2.)

Murder, theft, and adultery were considered slight offences compared with treachery, cowardice, and desertion; the former affected individuals mainly, the latter the common interest of the entire tribe. It is further a confirmation of our view, that the crimes of cowardice, treachery, and desertion are the first to be recognized and punished by law. These crimes by their disastrous results being the first to arrest the attention of society as such, are the first which society punishes in a regular way. "Instances abound of tribes among whom the only offences punishable by public authority are treason and its cognates, such as cowardice and desertion. Such was at one time the condition of the old German nations, and a similar paucity of recognized crimes is still discoverable among many of the Polynesian and

American Indian tribes, and is indeed quite characteristic of uncivilized races. On the other hand, probably no instance can be cited where public authority has been exercised in the punishment of other offences prior to its employment against those of a treasonable nature."—(William W. Billson, *Popular Science Monthly*, February, 1880.) The Duke of Argyle recognizes the fact, that "courage and patriotism" "were perhaps the most esteemed virtues of antiquity," and "are indeed even conspicuous in the savage and in the barbarian," without, however, perceiving its special significance. Man's greatest virtues, courage and fealty, grew out of utility under the din of conflict.

It is a part of this confirmation of the views here stated, that the relative importance of crimes changes with change in the forms of society. Crimes regarded at one time as slight have come to assume a greater stain of criminality, while virtues which were once moral monopolies have come to be regarded of somewhat less comparative value. Homicide is no longer a slight crime; and courage and fealty have less value than when the clan was in perpetual feuds with neighboring clans; they are less esteemed because they have less value. It is true that women and children and the country still need protection, but the urgency is much less than in former times, and the character of the protection required very much changed. The successful money-getter now disputes the palm with the successful soldier; and the merit of the former as a money-getter is becoming the most esteemed virtue of the times. Money enough will hide from view any amount of cowardice, moral or physical. Treason is still a capital offense because nations sustain attitudes toward each other of perpetual hostility, either latent or active; if they were all united into one, treason would pass from the category of crimes.

SECTION 92.—Let us give a moment's attention to the origin of the most esteemed virtue of woman. If it be true that among primitive people there was no exclusiveness in the relation of the sexes, there was no place for what is now known as female virtue. When communal marriage prevailed, the sexual

instinct was no doubt very much weaker than at present. Each woman having a multiplicity of possible husbands, the prompting of erethism would be certain to be met, and the succession of generations secured. The conception of chastity or self-control would only arise after women had become the possession of husbands either in polygamy or monogamy. The enterprising warrior who had secured a woman for himself from a hostile tribe, would probably refuse to share her with others (Lubbock); or after there came to be some property, and a man had paid for a wife with his own money, he would certainly regard her as his own exclusive possession (Morgan). And when the fashion became general of getting wives by might, cunning, or purchase, from other tribes, a community of feeling would spring up guaranteeing these women to their captors by an exclusive tenure. Once this feeling of possession became established, such women as conformed to it by their sympathies and conduct would challenge a higher regard than those who failed in this respect. Man would prize most highly the exclusive women, and sexual control would become in his estimation the greatest of her virtues. This feeling would attain greater strength whenever the support of children fell entirely on the father by the establishment of the family, since he would then have a practical reason for wishing assurance in the matter of paternity. When it became understood that men prized women most for this quality, it would become at once the interest of every individual woman so to conduct herself as to maintain her reputation for chastity. Any failure in this direction would bring to her the most terrible of penalties,—the scorn of her peers and the forfeiture of the sympathy of both sexes. As the rival of other women for a husband, as their rival for considerations of respect in society, everything would be lost by a misstep. Whatever of evil may attend on virtue under the exclusiveness of monogamy in which many must remain unmarried or ill-married, the rigid practice of virtue still subserves the best interests of the sex; and the failure to practice it is attended with crushing penalties.

Spartan laws and customs were not exacting of female virtue, because there was no family-life proper in Spartan society. It was different in the earlier periods of the Roman commonwealth. Among the Jews the penalty for adultery was severe; and the ordeal through which a woman, merely suspected and accused by her husband, must pass, was hardly less than brutal. Among our Saxon ancestors the women inflicted the punishment for violation of the laws of chastity. The offender was compelled to hang herself, or she was driven through the village and lacerated with rods and knives till she died. The mode of punishment in modern times is changed, but women still assume the chief responsibility of inflicting it. Everywhere the unchaste according to the accepted standard are overcome in the ordeal through which they are compelled to pass, and by common instinct, the life of conventional virtue is accepted by women as movement in the direction of least resistance. And here, too, as in regard to courage, the sentiment of virtue is a result of the organization of race-experiences involving pleasure and pain, and has become a "form of thought," apparently simple in structure and absolute in authority for the direction of conduct.

SECTION 93.—Without the moral quality of respecting the rights of property, a civilized community could not exist, but in primitive communities where everything is common, there is no place for such moral quality, and it is not known. In some conditions of society stealing is honorable, and one tribe steals from another. In this state of society, war is the rule and peace the exception. Unless there is a formal alliance, actual war is taken for granted, consequently, whatever a tribe steals is clear gain, hence general approval and the honorable character of theft. Even in modern warfare, under the suspension of civil law, stealing becomes an honorable craft; and in the mess, the most adroit thief is the most consequential member of it. His skill redounds to the benefit of his comrades, and they approve accordingly. In civil life theft violates a right which all should enjoy without disturbance, and its general prevalence would unsettle the basis of society itself; and it is condemned as

immoral. In primitive times, as soon as an individual acquired property in anything as the product of his own care, labor, or enterprise, he would resent the attempt of another to take it from him. If the theft or robbery should be actually accomplished by an equal within his reach, he certainly would retaliate. Stealing could only be practiced at a certain cost.

In controverting Helvetius' view of the conventional nature of morality, Diderot states the following case to illustrate the primitive moral conscience: "Qu'un sauvage monte à un arbre pour cueillir des fruits, et qu'un autre sauvage survienne pour s'emparer de ses fruits, celui-ci ne s'enfuira-t-il pas avec son vol? Il me semble que, par sa fuite, il décèlera la conscience de son injustice et qu'il s'avouera punissable; il me semble que le spolié s'indignera, poursuivra le voleur, et aura conscience de l'injure qu'on lui aura faite."—(Quoted by Paul Janet, Nineteenth Century, April, 1881). This does not so much illustrate the consciousness of property-rights already formed, as the manner in which it is formed. The savage would flee to secure his booty without a fight; and he would flee equally, if he thought he was taking the fruit by divine command for a holy purpose. But the uniform effort to inflict pain for theft would establish a condition necessary to be taken into account whenever theft was thought of; and when reflection and sympathy had become sufficiently developed as the basis of the mental power to put one's self in another's place, the sense of duty or conscience in relation to property would appear to follow as a legitimate result. The instinct of possession would become established by the acquisition and defense of property. The value of respect for the right of ownership would commend itself to society as a measure of peace against lawless contention, and laws would be made for the protection of property with adequate penalties. The prevailing observance of the rights of possession whenever the existence of property becomes general, is simply action under pressure taking the direction of least resistance.

SECTION 94.—Then, what is morality from this point of view? It is threading the way of life among antagonistic forces, and

taking such direction as meets with the fewest damaging blows. It is precisely that course which secures the greatest balance of happiness in a whole lifetime. Morality is the aggregate result of utilitarian adjustment in the midst of complicated conflict; and that is precisely the reason why "honesty is the best policy," and altruism superior to hedonism. Thus the exalted sense of obligation and duty grew up naturally and without mystery out of corporate or common feelings and interests of allied groups or peoples, to be extended and perfected as the social and political aggregates enlarged with the progress of society. And herein appears the qualifying fact necessary to be taken into consideration, that, morality is not an exclusively individual, but a social thing affecting the individual as one member among many which constitute society; and that, therefore, our causal definition has reference to the aggregate experience of individuals in society, and not to exceptional instances of individual experience. And we must again reiterate that the moral instincts are not built up by the experience of the individual merely, but by this superadded to the accumulated experiences of ancestors. And thus morality "has its more secure foundations in the hard won experience of mankind."—(Maudsley).

SECTION 95.—Religion like morality had its origin in utility pure and simple. Religion was the discharge of some good office to a superior being for the benefits which that being could confer, or to prevent the injuries which that being could inflict. The rites were performed more generally to escape from the evils to which primitive life is so greatly exposed. While moral constraint originated in similar experiences of utility, it is a social virtue even more than religious devotion; but while morality forbid actions which injured the family or tribe and approved those which resulted in the general good, so religion enjoined those duties to the gods which would induce them to do good or refrain from doing harm to the family or tribe. Both proposed precisely the same end by different means, and this identity very obviously served to unite them closely together in the habits and feelings of early peoples. They were born of the

same mother, possibly twins. And then when a class became differentiated as priests to officiate in religion for the good of the people, it was natural they should assume a supervision of morals as well, in behalf of the same good. Hence, from association, the two came to be regarded as inseparably bound up together in one, and as divine in means as well as in origin and aim. No doubt the religious feeling has done much to strengthen the authority of morals, but very little to give them shape for the best practical efficiency. While it has strengthened the good, it has only too often been ready, through the perversions of fancy and interest acting upon ignorance, equally to strengthen the evil. Morals are modified by circumstances, and are different in different countries and among different peoples. And very often religion has sanctioned at one place or time what both religion and morals condemned at another. But while different forms of society have different codes of morality, that code always comes into vogue which confers, or is supposed to confer, benefits on the dominant class or classes in society. Even when certain moral and religious usages are detrimental on one side, they are very certain to secure reputed advantages on a different side. Even suttee, human sacrifice, and religious orgies only justify the statement in part that through ignorance and bad reasoning, "the strangest customs and superstitions, in complete opposition to the true welfare and happiness of mankind, have become all-powerful throughout the world." Take an extreme example: Getting rid of the aged and of female infants is attended no doubt with certain advantages to the savages who practice these enormities; that is, the custom saves exertion, and there is less danger of the vigorous starving to death. Among some rude peoples, a young man must take off somebody's head before he can marry. This is a very savage and immoral state of things; yet it is not without its reason for being. Where this is the case, every tribe regards every other tribe as its natural enemy, and the ability to take the life of an enemy is the most useful to comrades that it is possible to display; hence its moral approval as the very crown of manhood.

But if turned against comrades, killing is then condemned as murder. Again, at one period in the progress of every advanced race "blood revenge" was the law. When any one was killed, his relatives must kill the slayer if possible, and if not possible, why then they must kill some one of his kindred. This was held to be one of the most sacred and urgent of duties. With us it would be very immoral; with them it was the height of morality, and not without reason. In those times of violence there was no state with adequate jurisdiction to try criminals and punish them; yet by some process must murder be avenged to keep it within bounds, or the lives of none would be safe. This was effected in simple fashion on obvious grounds of primitive jurisdiction by exacting blood for blood and by holding relatives responsible for the guilt of the criminal. This best subserved under the circumstances the moral interests of society. Comparative history is rich in such examples from the various departments of life.

What is considered chastity under one form of social organization and abides for ages, is not chastity under a different form, and could not be endured. Caste observances are absurd enough, but they have no doubt served a useful end in the maintenance of order. Class distinctions in the best forms of society known, however apparently vicious, come no doubt with a full measure of gratification to those who are at pains to keep them up. Etiquette, which is often arbitrary and too often made subservient to uncultured assumption, has its justification, nevertheless, in the need of protection for cultured sensibility. Mrs. Grundy's social standard and moral laws are not always the highest; indeed, they never are. They are a sort of average which it is best for average people strictly to observe. Though some of the fashions, like some of the morals and superstitions, appear to be in complete opposition to the greater welfare and happiness of mankind, they nevertheless yield a measure of surplus gratification which is the very warrant of their existence. The moral codes that fit must not be morally stilted.

There are people who sometimes rise above the prevailing

moral standard; but the arbiters of reputation will taboo them as contemptuously as if they had fallen below it (Mill). Hence, to rise above Mrs. Grundy's plane is to incur her displeasure and meet with her severest rebukes. One can only voluntarily incur this who has something of the moral hero in him. As an offset to the unpleasantness he thus meets, he must find consolation in his own consciousness of honest motive and earnest work, with the hope of justification some day. Even his course beset as it may be with opposition and danger has to him a balance of pleasure which determines his action. He would feel the unhappiness of conformity to be greater than that of non-conformity. So that moral heroism, even in the act of stemming the current, paradoxical as it may seem, is in itself motion in the direction of least resistance. The railroad engineer who voluntarily rides to death in the line of duty nobly illustrates this principle. "Ich kann nicht anders," exclaimed Luther at Worms. He was going the only road it was possible for a great soul to go. Such road precisely the martyrs have made holy.

Wrong actions sanctioned by the moral sense, are very often survivals of what was once the best possible, but is so no longer, owing to changed conditions. An example may be given. In feudal times private war was regarded as a sacred right, and just as moral as we now think national war. But when political unitization had given the State sufficient power to deal with all dangerous disputes between subjects, private war became unnecessary and immoral. Still it was tenacious of life, and from habit survived the conditions under which it sprung up; and it was only put an end to after a struggle with the superior powers of the State. Sacrificing to the dead was, among the ancestors of the Romans, a pious filial duty, but out of it grew that anomaly of history, the Roman circus; which with amplified iniquity and outrage, lived on through the most exalted period of Roman civilization. There is scarcely a society on earth that is not full of customs, rites, and observances which have survived the circumstances which gave them birth; and

while some of them are perfectly innocent and pleasure-giving, others are waking up a feeling of incongruity which will eventually put an end to them.

It is to be observed that to a considerable extent, it is not so much what really is beneficial as what is believed to be beneficial that becomes established as a rite or custom; and this has been far more prevalent in religion than in morals. The sanctification of immorality has been largely due to misinterpretation of the order of nature and the misconception of the means to good. When the Ghonds sacrifice one of their number, tearing the victim to pieces a bit at a time, and prolonging the torture as much as possible, they commit an immoral act, though at the same time a religious one; but they do it in full sincerity and faith that it is necessary to make the seasons propitious. Mankind have largely worked to the pattern of a utilitarian world of their own in faith, which is often sadly at variance with the real world as discerned by a higher degree of intelligence.

SECTION 96.—If the warrant for morality here indicated be true, then is it not factitious and arbitrary, but largely founded in the nature and relation of things, and brought into practical and systematic form through the experiences of life, feeling for the path of least pain. This may sometimes be thwarted under the divergent interests of classes, the misconception of the means to good, and the incongruities of survival, and evil spring up under the sanctions of morality and religion; but it is still true in a general way, that the great moral virtues have their basis in the conditions and needs of the society which enforces them.

A writer in the North American Review, who jokes in the interest of reaction, has this *jeu d'esprit* concerning morality: "A new and relaxed edition of the commandments must be provided and published,—no, not of the *commandments*, for there is no one to command them, but of the *invitations*, which must all (fewer than ten will serve) appear in gay dress, and with smiles on their faces to attract young men and maidens. I am not competent to draw out this law; our leaders must do it." He

then proceeds in the same cruel vein to point out a few of its governing principles. He quite mistakes the character of the views he ridicules; and the wit misses its aim, shooting under. He conceives that a system of morality can have no authority unless there is a being of terror to command it. He is in that phase of survival which regards the moral government of the world as not by regular sequence in the established constitution of things, but by anthropomorphic supervision under a system of arbitrary law. But the anthropomorphism is not necessary; without it the law does command: This shalt thou do and that shalt thou not do; and it commands with adequate sanctions as the transgressor very well knows. "All nature breathes the spirit of authority, and is full of the exercise of command. 'Thou shalt,' or 'Thou shalt not,' are words continually on her lips, and all her injunctions and all her prohibitions are backed by the most tremendous sanctions."—(Duke of Argyll, *Con. Rev.*, Feb., 1881).

If this be correct—and it is—then the following is not true: "Vice can be enjoyed in common just as well as virtue; nor if wisely regulated will it exhaust the tastes that it appeals to. Regulated with equal skill, and with equal far-sightedness, it will take its place side by side with virtue; nor will sociology or social morality give us any reason for preferring the one to the other."—(W. H. Mallock. *Is Life Worth Living?* Chap. III.)

When an author issues a bull like this, he ought to give relief to the tension of the reader's mind by instancing some familiar examples. Still we may be able to gather enough from the context to identify the author's position. The moral and religious authorities assume to decree what vice is and what virtue is. These authorities sometimes pronounce a certain course of action as vice because it is offensive to them, and they wish to render it obnoxious. Such course of action thus condemned as vice may be in itself apparently natural and right, and to other classes in community with other views, particularly desirable. But this very fact renders it a greater vice according to Mr. Mallock and his clients. Thus free inquiry on certain subjects is a vice, which

authorities recognized as such by millions of human beings have moved heaven and earth to put down; and yet people may practice this "vice," and greatly enjoy it for a whole lifetime. In like manner, and by the same authorities, the secular education of children is the head vice of all, and yet whole nations take pleasure in it, and persist in keeping it up, greatly to the annoyance of the chief priests in all the hierarchies. There is no limit, indeed, to the social enjoyment of such factitious vices; and this very fact should make it suspicious that their character is factitious and not real. The idea in the above quotation, of regulating the practice of vice with equal far-sightedness as the practice of virtue, is grotesque enough. Such a notion overlooks the fundamental difference between vice and virtue, since far-sightedness condemns the practice of the one, and commends the practice of the other; and in so overlooking this distinction, confounds vice with virtue. If a course of action is warranted by the constitution of nature, of the human mind, and of society, as that which is attended on the whole with the greater balance of happiness, it is not a vice, however lustily it may be denounced as such even by well-meaning people, and its enjoyment in common affords no ground for paradox. That a virtue may be attended with immediate sacrifice is no proof that, in the end, it may not make for happiness in the largest measure possible. A real vice is a very different thing. What is at variance with the fundamental laws and relations of society cannot be practiced in common without disagreeable consequences; and it cannot be regulated with far-sightedness in the interest of happiness; if it could be, morality would have no valid sanctions, and no particular use except to maintain the consequence of certain orders in society.

The notions of reactionists often go not only to ignore but actually to undermine the basis of morals, first by denying the only real sanctions of morality, and secondly, by approving what should be condemned, and condemning what should be approved. This we think is clearly to be seen in Mr. Mallock's desperate struggle with modern thought. The new ideas are a

horde of barbarians which have been let loose upon us! A certain course of action apparently part of inevitable and irresistible tendency, and quite generally thought well of, is to be condemned and cast out because, forsooth, it is not in accordance with the mediæval spirit! Indeed, life itself is not worth living unless it is what it was conceived to be in mediæval times! Moreover, things are not to be explained, since this can only be done by first rendering them not worth explaining! Hence, life is only to be regarded as worthful so far as it is invested with the glamour of delusion! The author hopes that faith will yet succeed and conquer sight. That is, that delusion shall override common-sense, and survival reign instead of progress. So, to be happy, we must trustfully and lovingly fall into the lap of the Mother Church! Such is the outcome of discussing moral questions under the coloring of traditional bias uncorrected by the light which history and the comparative method afford.

It is the spoiled child over again. If he is not permitted to have all the sweetmeats he wants to disorder his stomach and make him testy and exacting, he forthwith decides that life is not worth living, and may be, he threatens to make away with himself. If Mr. Mallock's school cannot retain around life the glamour and delusion with which primitive views of nature and of life have invested it, it is, forsooth, not worth living, and they become rank pessimists, teaching that life is degradation. According to the good old stoics nothing is evil which is in accordance with nature; according to Mallock there is little but evil in nature, and everything is good which is in accordance with the dogmas of the church. Of course it disturbs equanimity of feeling to have the dogmas shattered and overthrown which have all along been trusted so implicitly and loved so well; but the human mind has a wonderful facility of adaptation, and when the spoiled children get over their tantrum, they will be surprised to find how well they feel; and threatened rebellion and malevolence will react into a cheerful acceptance of the inevitable situation.

NOTE.—I am well aware that a chapter like this is liable to be misconstrued by moralists whose vague theories scrape the skies, and whose moral sanctions are so invested with mystery and awe as only to be named with bated breath. Many qualifications and explanations would be needed to fence it round about for protection against misapprehension and adverse criticism, but they cannot be made here. I am furthermore quite conscious that this statement of the origin and sanctions of morality has none of that sanctimonious air so much the fashion, and which is so potent to make amends for any amount of commonplace and dullness on this subject. I believe it to be a question of science and history which should be treated of in the secular spirit. If the view herein taken should fully account for every form of good there is in moral systems, showing in a general way how, and the reason why, it came into existence, it may afford to dispense with the "goody" style of treatment.

PART THIRD.

HISTORICAL BREVITIES ILLUSTRATING CONFLICT.

CHAPTER XIII.

GENERAL HISTORY.

SECTION 97.—The most obvious and striking fact in general history is the conflict of nations and peoples in their migrations and wars. The great body of history is made up of the records of these transactions—bare records with little to enlighten us concerning the indirect but most important results of such conflicts. There were actors enough to struggle for selfish ends, but few philosophers to divine remoter consequences. Certain it is that these conflicts have been a huge factor in shaping history, and in making society what it is,—and also, through the discipline of the individual both directly and under the reaction of society, in moulding him into new and diversified psychological forms. The relation of cause and effect by which these indirect results come about, is usually so obscure and so little related to the obvious motives of the conflicts, as quite entirely to escape the observation of contemporaries and of those who lived near the time of the events. It is only by accumulating through the centuries, and into times of systematic inquiry under the stimulus of a more rational culture, that rigid methods may direct historical investigations, and bring to light the more recondite results of historical movement. Our concern here has to do only with the manifold forms of conflict among and within peoples and nations.

SECTION 98.—The State has all along been maintained on the exigencies of conflict; and it is quite impossible to conceive how without the disposition of aggression and the necessity of defense, political organization could ever have taken form. The little knot of kindred which we must regard as the original germ of State organization constituted a little band offensive and defensive on general war principles. It was bound to get all it could to the full satisfaction of its wants; and through mutual aggression there would be frequent collision between family groups whose members must then stand by one another for self-preservation. In consequence of this same need of defense and desire of aggression, were these social units enlarged by aggregation through leagues and conquests. This is but a modified form of the view taken of the origin of the state by Hobbes and Spinoza. Modern research has discovered that the original unit of the larger aggregations of mankind, was a group of kindred by birth or adoption, called the household, clan, or gens. Whence came this original unit? Why did it ever form at all in a union so firmly knit together?

In accounting for union and sociality among mankind, speculation seems to have given preference to the feebleness and long duration of infancy. Shaftesbury asks: "Does not this defect engage him [man] the more strongly to society, and force him to own that he is purposely, and not by accident, made rational and sociable, and can no otherwise increase or subsist than in that social intercourse and community which is his *natural state*?" He deduces every form of the social affections in man from this feebleness of infancy: "conjugal affection, and natural affection to parents, duty to magistrates, love of a common city, community, or country, with the other duties and social parts of life."—(Characteristics, II., 309.) Condorcet regards the constitution of the family as natural: "Formée d'abord par le besoin que les enfants ont de leurs parents, par les tendresse des meres, par celle des pères, quoique moins generale et moins vive; la longue durée de ce besoin des enfants a dû donner le temps de naître et de se developper a un sentiment propre à inspirer le

désir perpétuer cette reunion. Cette même durée a suffi pour en faire sentir les avantages.”—(Œuvres VI, 25-6.) The influence of prolonged infancy in establishing the primitive family and in developing sociality among mankind has been brought into prominence under the light of modern research by Mr. Fiske in his chapter on the Genesis of Man morally, Cosmic Philosophy. While there is no doubt much weight in these views, it may well be doubted whether there is not still something else required to impart to the feebleness and duration of infancy their efficacy in building up the social element in man. It is true that the habit of remaining together from necessity, would generate the desire to remain together after the occasion for union had passed; but the intervention of some counter necessity would very readily overcome the former after its direct force had been spent. We have seen in the preceding chapter that the social instincts of animals appear to have been largely determined by the necessary conditions of sustenance. Those which succeed best by living together become gregarious; those which succeed best by living alone become solitary.

The needs of infancy are not so great among primitive peoples as among ourselves, and we should be careful not to overestimate them. But among civilized peoples, with the greater weakness of infancy, and the greater development which the social instincts have received from ages of discipline, we see how readily kindred separate, going to all points of the compass in the wide world. Then what bound the primitive group together? The necessity of union for mutual protection in a state of universal war. Now, the family readily separates under the mere impulse of “getting on in the world,” because the overpowering State affords protection; then, kindred clung together because they must for mutual preservation. If mankind from the first till now could have existed better in isolation, or in single isolated families, than in an associated capacity, they would have remained forever isolated without further social instincts, like the lion and eagle. But the savage, with

solitary habits, if accessible, would have stood little chance of survival, being liable to be cut off by enemies, brute or human, who would unite for that purpose. The compulsion of uniting in bands would establish the habit and feeling of fellowship and necessitate incipient organization. Owing to conditions of perpetual warfare, the isolated monogamic family as we know it, could not have existed as the unit of a sparse population, and the relation of the sexes assumed a mutually plural character in the organization of the gens and tribe. It was union in large families (*gentes* or clans) and groups of such families (tribes) for safety; and the social and organizing instincts were thus exercised and strengthened from age to age by the exigencies of life through combination for success in the ever-present struggle of existence; and thus it has come about that the social instincts are stronger in civilized than in savage peoples.

When progress had carried portions of mankind into the agricultural stage of society, and there was some exchange of products with division of labor, cities sprang up—walled cities almost invariably. The increased wealth could only be protected from general plunder in densely populated places; and the cities were only safe with walls around them. Cicero observes: "For though men are by nature sociable creatures, yet it was the design of preserving what they had that first put them on building of cities of refuge." But this very thing made them more sociable. People united to defend their own, and also to get what belonged to enemies (strangers); and so the social ties were strengthened by both the processes of attacking and defending. This process had long been going on and the germ of the walled city appeared very early. The "stockaded village" was the form which fortification assumed at an early period of tribal existence, when it was life rather than property that needed protection. Later appeared the "joint tenement house of adobe bricks and of stone, in the nature of fortresses." Still later, in the last stage of barbarism, under some increase of wealth, arose "cities surrounded with ring embankments, and finally with walls of dressed stone."—(Morgan, *Ancient Society*, 257, 533).

The last was but a more advanced form for similar ends, of what had existed for ages and ages before. Contemplate the development of society as we may, we cannot fail to perceive that conflict has been the chief factor in determining its form. We must regard the social or gregarious elements of character as derivative, as formed by education under the stern experiences of life. We can understand that when two groups of hungry savages meet over a slain stag, the original impulse of individual preservation would excite them to combat, and thus contribute to the development of pugnacity. We can further understand how this need of contest leads to combination, and that out of habitual combination for success and safety the social instincts and capacities have mainly sprung.

Dr. Bernard de Mandeville, an original but somewhat perverse writer, early in the eighteenth century, very well stated this view of the origin of society. In a general way he finds the origin of sociableness in the "multiplicity of man's desires and the opposition he meets with in his endeavors to gratify them." He teaches that if mankind had been simple in their virtues with few wants, they could never have "raised themselves into such large societies as there have been in the world."—(*Fable of the Bees*, 220). "The first thing that could make men associate would be common danger, which unites the greatest enemies: this danger they would certainly be in, from wild beasts, considering that no uninhabited country is without them, and the defenceless condition in which men come into the world."—(425). The author amplifies on this feature of social evolution; and in speaking of savages repelling wild beasts, he assigns to man the gradual improvement of his weapons very much as an archæologist would do now-a-days. In one of his dialogues, he makes Horatio repeat that the first step toward society was the necessity men were in of assisting one another against savage beasts. Cleomenes then adds: "The second step to society is the danger men are in from one another; for which we are beholden to that stanch principle of pride and ambition, that all men are born with. Different families may endeavor to live

together, and be ready to join in common danger; but they are of little use to one another when there is no common enemy to oppose. If we consider that strength, agility, and courage would, in such a state, be the most valuable qualifications, and that many families could not live long together, but some, actuated by the principle I named, would strive for superiority: this would breed quarrels, in which the most weak and fearful, for their own safety, always join with him of whom they have the best opinion." Whereupon Horatio suggests that, "this would naturally divide multitudes into bands and companies, and of which the strongest and most valiant would always swallow up the weakest and most fearful." Cleomenes declares that this is precisely the state of things we find. "The third and last step to society is the invention of letters." But this is peaceful, and it is quoted to show that the author was not riding any war hobby.

These views of Mandeville have been confirmed by the latest and most thorough researches. Lewis H. Morgan, in *Ancient Society* (122), says: "A tendency to confederate for mutual defense would very naturally exist among kindred and contiguous tribes. When the advantages of a union had been appreciated by actual experience the organization, at first a league, would gradually cement into a federal unity. The state of perpetual warfare in which they lived would quicken this natural tendency into action among such tribes as were sufficiently advanced in intelligence and in the arts of life to perceive its benefits. It would be simply a growth from a lower into a higher organization by an extension of the principle which united the gentes in a tribe."

Herbert Spencer, in his chapters on the Development of Political Institutions, in course of publication in the *Popular Science Monthly* (1881), brings out very clearly the part which primitive hostility and national conflict have played in uniting men in political bodies. "For we see here that in the struggle for existence among societies, the survival of the fittest is the survival of those in which the power of military co-operation is

the greatest, and military co-operation is that primary kind of co-operation which prepares the way for other kinds of co-operation. So that the formation of larger societies by the union of smaller ones in war, and this destruction or absorption of the smaller ununited societies by the united larger ones, is an inevitable process through which the varieties of men most adapted for social life supplant the less adapted varieties."—(*Popular Science Monthly*, January, 1881).

The manner in which this comes about is well stated by Tylor, *Anthropology* (432-3): "The effects of war in consolidating a loosely formed society are described by travelers who have seen a barbaric tribe prepare to invade an enemy or defend their own borders. Provisions and property are brought into the common stock; the warriors submit their unruly wills to a leader, and private quarrels are sunk in a larger patriotism. Distant clans of kinsfolk come together against the common enemy, and neighboring tribes with no such natural union make an alliance, their chiefs serving under the orders of a leader chosen by them all. Here are seen in their simplest forms two of the greatest facts in history,—the organized army, where the several forces are led by their own captains under a general, and the confederation of tribes, such as in higher civilization brings on political federations of states like those in Greece and Switzerland. Out of such alliances of tribes, when they last beyond the campaign, there arise nations, where often, as in old Mexico, the head of the strongest tribe will become king."

SECTION 99.—Nothing better exemplifies the firm bonds which held rude peoples together in the midst of conflict, than the rigid unwritten code, under which fealty to chiefs and to one another was exacted. Of the ancient Germans Tacitus says: "In the field of battle, it is disgraceful for the chief to be surpassed in valor; it is disgraceful for the companions not to equal their chief; but it is reproach and infamy during a whole succeeding life to retreat from the field surviving him." The battle of Maldon was fought A. D. 991 between the invad-

ing Northmen and the East Saxons under their Ealdorman, Brightnoth, who was killed :

“ Rath was in battle
Offa hewn down.
Yet had he furthered
That his lord had pledged,
As he ere agreed
With his ring-giver
That they should both
To the borough ride
Hale to home,
Or in the host cringe
On the slaughter place
Of their wounds die,
He lain thane-like
His lord hard by.”

—*Growth of the English Constitution, Freeman, 44.*

But we need not go back this far to find examples showing how conflict has developed the social instincts which bind mankind together. In comparatively modern times the Scotch Highlanders present a striking example of the kind. The feuds between clans and their contests with the Lowlanders rendered their life above all things warlike. Acts of mutual helpfulness which this made necessary, the sense of common peril which could only be averted by combined effort through fealty to their chief and to one another, formed a character remarkable for fraternal devotion. They hesitated not to meet certain death, hundreds of them one after another, rather than betray comrade or chief. “Chivalrous, self-sacrificing fidelity was the great virtue of the Highlanders, and the education of the clan-life made it at last a distinguishing feature of the Scotch character.” —(Lecky).

The irrepressible nature of the sentiment of patriotism, in consequence of which unappeasable discontent follows the extinction of nationality by conquest, has its origin in this same source, the brotherhood of conflict descending with its loved traditions from generation to generation, until it has become a fixed constituent of the character of the people. Even in the latest times, hardly anything so establishes the bond of friendship across all

lines, as to have stood together in the perils of battle, marched in the same columns, bivouacked on the same fields, slept under the same blankets, and "drank from the same canteen." Said General McClellan in his farewell address to the army, "Nothing is more binding than the friendship of companions in arms."

The history of our country illustrates the part which conflict plays as the motive of political confederation. In 1643 the first union of the kind was formed between four New England colonies for protection against the Indians; and most of the counts in the agreement had reference to this object. The Indian tribes were themselves united in leagues and more formidable in consequence. The danger was great enough to unite these four colonies, but not great enough to overcome the repugnance of Massachusetts for Rhode Island, and the latter was left out of the compact. In 1754 another confederation was projected between a larger number of colonies with the same objects in view, being apprehensive of trouble with the French and Indians. These tentative efforts were followed by still greater in the same direction when the Revolution broke out. "It is not enough for a people to form political unions by getting constitutions made to order, and by copying approved models; there must be something for national feeling and a sense of unity to rest upon. The revolutionary war created a common history, of which no state need be ashamed, and prepared the way for union, not merely by the necessities of the times but by exertions and sufferings in a common cause; and the feeling of unity thus enkindled could overcome, for the time at least, all causes of division. Hence, in more ways than one, the war made us a nation."—(Woolsey, Political Science, II., 242).

SECTION 100.—The different branches of political organization, as we now find them, are severally and jointly the developed product of early conflict through long periods of evolution. The little primitive group or gens which constituted the unit of tribal organization had its chief—in times of danger it must have its chief, even though he lay down his authority when the danger has passed. And when this original gens became a tribe, there

must be a head-chief; and when the tribes came to form a league, it was under the exigency of war, and whatever the provision for civil administration, the war-chief was still the greatest factor of all. Early political organization, or rather the early germ of political organization, was based solely on the principle of kindred and concerned the people themselves with little or no regard to territory. The gentes of kindred formed into tribes, and tribes formed into leagues; but with the increase of property and commerce, and the mixing of peoples, this tribal organization on the basis of kin did not answer the ends of government, and it became necessary to find another base for political organization. Government came at length to rest on property within a small territorial district with definite boundaries, as its unit. Formerly the unit of organization was the gens or clan, now it was the deme, canton, or township. But whether it was gentes, united into tribes, and tribes into leagues in barbaric government; or whether it was demes united into counties, and these into states in civilized government, there must be provision for unity of action; and in times of war there must be a commander in chief. In the growth of English nationality, "marks grew into hundreds, hundreds into shires, shires into kingdoms;" and throughout the entire process, each union recognized some chief or head, the germ of monarchy in fact if not in name. It was to secure unity of action, and unity of action was made necessary by the imminence of disorder within and of war from without.

In like manner arose the legislative branch of government. The chiefs and leading men must consult in a council of war to secure concert of action in what concerned the highest interests of all. And when the primary units of society grew by coalescence, or by conquest and aggregation into a city, state or nation, the little war council grew along with it till it became the senate or parliament. Without the necessity of co-operation among all the powers of the state in war, the deliberative body could never have arisen, or if by miracle it had arisen, it could not have been maintained. This is well shown in the history of

the English parliament. If the co-operation of those whom it represented could have been done without in times of war, the parliament itself would have been dispensed with by the kings of England. But the kings when in need of supplies for war with France or Scotland, were largely at the mercy of parliament, and must needs conciliate it. The legislative body thus acquired the consciousness and habit of power; and though at times, as under Henry VIII. and Elizabeth, it did little more than register the sovereign's will, it was never put out of existence, and returning to the struggle for its due weight in government, it became at length the greatest political power of the realm. Parliament is literally the creature of conflict: "Parliament is, moreover, the one abiding result of all the seemingly blind struggling and fighting, in the battlefield and elsewhere, of all the forecast and effort, which made the reigns of John, Henry III., and Edward I. among the most stirring in our history."—(James Rowley. *Rise of the People and Growth of Parliament*, 14.) And in regard to the general fact Herbert Spencer says: "There is ample reason to infer that the council of war originated the consultative body, and gave outlines to its structure. Defense against enemies was everywhere the need which originally prompted joint deliberation. For other purposes individual action, or action in small parties, might suffice; but for ensuring the general safety, combined action of the whole horde or tribe was necessary; and to secure this combined action must have been the first motive for a political gathering."—(*Popular Science Monthly*, June, 1881.)

In very early times when war was the prevailing thought and condition of men, and each little confederacy of tribes depended on its alertness and courage to hold its own, the need for union and strength was so great that the military chiefs grew in practical consequence and power, and came to be called "kings." But under the protection which walled cities afforded, the king became of less consequence, others took a hand in the affairs of government, and the political power was divided to the disadvantage of the king. It was no longer as in preparation for war,

a meeting of magnates to confer power on a chief; it was such meeting to divide with him the power which under civil conditions need not be exclusively lodged in one man. An oligarchy might acquire the ascendancy, or the city government with its little state might become a democracy. This was exemplified in Greece and Italy.

With relief from the constant danger of disastrous invasion, and with the progress of intelligence and discerning criticism, all governments in a certain stage of development, tend to become more liberal. The throne may still be retained, but its absolutism has departed. But there is to this a counter tendency which may supervene. In larger political aggregations, a large measure of liberty may not be possible without disorder, and intelligence itself may accept of despotism as the cure of anarchy. "In such communities as those of which Athens and Rome are the great examples—in that walled city which was the cradle of a large part of modern ideas—the organs of freedom, as we should say, continually increase in importance. The assemblies monopolize power. The king either disappears or becomes a mere shadow. But in communities spread over large spaces of land, and without walled towns, it is the king who governs, and all popular institutions tend to fall into decrepitude."—(H. S. Maine, *Fortnightly*, November, 1881). The growth of liberty with the growth of intelligence and security—the growth of centralized power with the increase of political elements and the extent of territory they cover;—these constitute essential conditions of the eternal conflict through which the face of political history has ever been changing.

Not only does conflict make up the substance of history; it constitutes the very conditions of history. Without it there would have been none to attempt the record of events. Not only does conflict lead to social and political development; it leads to all development. It is the *sine qua non* of intellectual as well as of social evolution. It is at the bottom of all growth in intelligence, of all invention, of all progress whatever the kind, of man's very consciousness of superiority among the creatures

of the earth. "Not simply do we see that, in the competition among individuals of the same kind, survival of the fittest has from the beginning furthered production of a higher type, but we see that to the unceasing warfare between species are mainly due both growth and organization. Without universal conflict there would have been no development of the active powers."—(Spencer, *Popular Science Monthly*, November, 1880.)

SECTION 101.—Through all history run two antagonistic factors in the form of national integration and disintegration. Nations rise and fall, and as one goes up another goes down. Empires, like minor institutions, were not made and set up; they grew. In some instances the growth has been very rapid, in most it has been very slow. The starting point has often been a diminutive germ which increased by successive aggregations, and became more complicated in structure with increase of territory and power. But while this was taking place, a counter-force was at work testing the strength of every joint and ligament which held the parts together; as, for example, the revolt of provinces, the mutual hostility of ambitious chieftains, internal dissensions of whatever kind, the onset from without of powerful enemies. The successful resistance of such disturbing forces would add to the strength and stability of the political structure, but any serious breach in the defenses, internal or external, might prove to be fatal. Further on come luxury and the relaxation of early virtues; corruption within, favoritism, oppressive taxation, the decay of patriotism; at last feeble resistance, internal feuds, national overthrow. Every nation and empire must needs surround itself with a girdle of strength as a safeguard against explosive forces within and aggressive forces without, which are ever seeking for a weak point whereat to initiate changes toward disintegration. The strong governments of the earth have often been made such by the necessities of self-preservation. When freedom has deteriorated into anarchy, centralization and despotism have been welcomed for the peace they brought. It was this crowned Cæsar, and Cromwell, and Napoleon—for they were all virtually crowned; and it is this that may some day

crown an American. The great danger lies in the conflicting interests of classes, in the weakening loyalty of those who seek protection or look for privileges from the government, and in the conflict of great parties and the ambition of their unscrupulous chiefs.

SECTION 102.—In every nation and among every people during the period of development, there is conflict between the two forces known as liberal and conservative, or progressive and reactionary. Everywhere is the conservative principle at work to maintain the existing status without change; and almost everywhere are counter forces at work to produce change. Each of these tendencies is supported by a party, not necessarily well defined and formally organized, for very often these conflicting principles or some modification of them enter the creed of each of the opposing parties, the conservative prevailing in one, the progressive in the other. And in this respect, too, may the parties even change places; but none the less are the two principles arrayed against each other with their abettors joined in a never ending struggle for the advantage. It is the function of the progressive force in human affairs to overcome the resistance which is ever made by the forces of conservatism. History is but another form of mechanics, the principal idea of which is that of producing an effect by means of power. The power would be unnecessary and would have no use but for the resistance. The weight might be lifted, the obstruction removed, or the fabric wrought, merely by willing the result, were it not for the intractable nature of the materials. In the phenomena of mechanics, as already stated (Section 55), there are two classes of forces constantly acting in opposition to each other; the one, the resistance of gravitation, cohesion, etc., of bodies; the other, the aggression of the mechanical force by which the weight is lifted, the fabric made, the result of whatever kind, produced. The one would keep things as they are; the other would bring about change. A great deal of history might be written from this point of view.

Some nations are now stationary; it is not likely they were

always so. These nations had origin, if not direct at least indirect, far back in primitive times, and change attended their course until they reached the political and social forms which have crystallized into permanency. Why the changes of polity accompanying growth and development? Increasing density of population, improvement by cultivation of the country inhabited, the necessities and conveniences out of which sprang commerce, internal and external, the influence of forming states on one another, the shock from outside aggression and learning from enemies;—while those were under way—themselves, under the circumstances, natural and inevitable changes—they made the political and social aggregate different from age to age. Something like this must have taken place even in China. China only stopped movement when it was able in a certain measure to become a little self-sufficing world of itself. It must have had ample territory, with its resources developed according to the best skill of the times, a population well nigh its maximum, with a strong central power thoroughly organized, and able to exclude disturbing influences, coercing them into conformity, and defending the integrity of their social and political forms against all comers.

This much might be ventured *a priori*, but the geography and history of China confirm it. The natural boundaries of the country are such that, in former times, the people were well protected by natural barriers from outside influences. The peculiar language of the country contributed to the same end. At the same time all the supplies of life were to be had within. Climate and soil have a wide range of diversity; and facilities for intercommunication between different sections favored internal commerce and the formation of a homogeneous people. China only became consolidated as an empire after a long period of conflict between state autonomy and the central power. The T'sin dynasty made progress toward unity, but it was only fully established under the T'ang monarchs; consolidation being thus completed after a struggle of a thousand years.

But even this apparently impregnable rampart of institutions

is yielding, though slowly, to the aggression of modern influences. The kind of forces which penetrate countries and change civilization are more subtle and less resistible than in former times, and even China is not able to hold out against them. The civilization of science, acting mainly through commerce and invention, is edging its way into this old country, and the result is the inauguration of changes which will no doubt multiply, till the China of a few centuries hence will be quite unlike the stagnant China of the past.

Japan, too, which was inert under the spell of Chinese literature and custom, is waking up at the touch of a new civilization, and counter currents are setting in. While the Mikado and the priesthood have endeavored to maintain the old condition of things without change, a liberal party, composed of some of the princes and others belonging to the privileged classes have been agitating for change in the interest of progressive civilization, and with every indication of ultimate success. There is less inertia in the smaller country of Japan than in China, and the stationary elements are more easily set in motion. Japan is rapidly changing.

A people so tenacious of their peculiar institutions as the Jews have not failed to leave signs of the changes wrought in them by their contact with other peoples. Their kings had to do with the outside world, and were prone to innovate under the common impulses which lie at the bottom of fashion, whether political, religious, or other. The prophets, under the zeal of an inspiration which was not held strictly to rule, may have been given to innovation with other motives than those which actuated the kings, and in a different direction. The agents of conservatism among the Jewish people were the priests; and in what relates most intimately to the functions of the priesthood is it that the Jews have throughout shown most strikingly their characteristic pertinacity of opinion. They have illustrated in a peculiar manner the antithetical qualities of racial plasticity and rigidity, adapting themselves to the institutions of the several nations under whose rule they live, but

stubbornly maintaining at the same time their religious, and even their physical integrity, as a peculiar people.

SECTION 103.—Another general form of historical discord arises from the conflict of classes. In the primitive state of society there is little of this; there were no classes and no class interests to come in conflict. With increase of population and territorial improvement, society forms into strata, and new classes and professions come into existence; and the social diversity increases with the progress of civilization. Among ancient peoples there might be a clashing of interests between the aristocrats and the common people, or between the slaves and their masters, but none of the diversified shapes of antagonism constantly arising as ghosts, that will not down, between the numerous class-interests of modern society. As, for example, the battle between labor and capital was never so clearly defined as at present, and never so hopeless of peaceable adjustment. Not only so, but the different divisions of the great army of workingmen are set against the interests of one another. It is the aim of a labor union to limit the number of workers in order to enhance the price which all laboring men must pay for its product; and when other labor unions conspire in the same way to keep up their wages through the price of their product, the contest becomes a very complicated one, and their mutual victories neutralize one another. Even the wealthy may turn to the agitation of adverse interests in relation to the measure of values, taking opposite sides as their possessions may consist in money and credits, or in other property, the one desiring to make money dear, the other to make it cheap. The great manufacturers want a high tariff for protection, and the mercantile class want duties to be confined to a few articles of general consumption; and thus the great agricultural class becomes the grist to be ground between these two as the upper and nether millstones. There could have been nothing of this kind in early times, although there is a great deal of it now. These and kindred matters will come up for brief consideration in future chapters.

CHAPTER XIV.

GRECIAN HISTORY.

SECTION 104.—The current of Grecian history had been running for ages, and had reached a considerable degree of civilization before any trustworthy record of details was made. But from this time on till Grecian independence came to an end, it is one continual display of conflict in the several spheres of life. Conflict made Greece what she was, elevating her into prominence as one of the original forces of civilization and great landmarks of the world's history; and when she succumbed to Macedonian rule, and afterwards became merged into the Roman empire, the changes came about only through conflict.

We first hear of Greece as a congeries of little states not united by political organization, but only by common kinship and by common interests, so far as they might at any time feel that their interests were common. This, however, did not often occur, being dependent on the condition of threatened danger from some great non-Grecian power. But even then, the Greeks never all united under one banner; several Grecian states, states even centrally located, sent earth and water to Xerxes in token of submission.

The leading forms of conflict as illustrated by Grecian history, may be stated as follows: First, between rival citizens for the attainment of power; secondly, the strife between classes which divided on the line of oligarchy and democracy; thirdly, the struggle between state autonomy and empire; fourthly, the contests between states; fifthly, the great wars between Greeks and barbarians; to which may be added, sixthly, the conflict between slaves and their masters, a chronic terror, especially in Sparta where the Helots once in arms proved themselves formidable, and where the dread of their rising seems to have been perpetual.

SECTION 105.—As Grecian civilization found its highest expression in Athens, so here do we find the fullest illustration of conflict and its consequences. Under the democracy of Athens every freeman was a legislator and sovereign, having part in the making of laws and in their execution. Before him were debated all matters of public concern, and if he chose, he might himself take part in the discussion. But, if as an individual he preferred charges against another, or was himself the defendant in a contest at law, he must needs plead his own case before a large body of his fellow-citizens known as the dikastery. For these political and forensic contests, training was necessary, and the result of it all was an intellectual quickening which especially characterized the Athenians. Athens was not isolated, but had social and political relations with the other cities and states of Greece, and whatever the results of her advantages, they were imparted in some measure to others, while her own keen sensibility profited by whatever of originality may have been indigenous in the other branches of the Hellenic race. Athens more than any other city of Greece produced great artists, orators, statesmen, and philosophers, although she had by no means a monopoly of distinguished men. But that they were here in larger proportion than in any other Grecian state, is due to the fact of freer conditions for the full play of those forces in the form of individual emulation and combat which result in development. Athens was especially a maritime city; and Athenians came in contact with a diversity of peoples, and thought was stimulated, and progress abetted by manifold forms of friction between minds of diversified education. Athens thus became a centre of culture which drew to itself the aspiring genius of all Greece.

SECTION 106.—In Grecian history we have examples of conflict between monarchy and some more popular form of government; but far more between oligarchy and democracy. This constituted a chronic struggle among the people of almost every Grecian state, generation after generation, during the most flourishing period of Grecian history. Athens became the prin-

cipal of the democratic states, while Sparta, though she had kings, was yet an oligarchy, and the leading example of aristocratic government. With the power of the two factions almost equally balanced in many of the states, this side now winning and then the other, with Sparta to abet the oligarchs, and Athens the democrats, we may well conceive the instability and turbulence which arose from this cause. Some of the cruelest tragedies of Grecian warfare pertained to these contests for power between oligarchs and democrats, and grew out of long standing feuds and the bitterness of party strife which only wanted power, at any time, to wash out in blood a long score of personal and partisan grievances. We need only name the despotism, violence, and treachery of the Four Hundred and of the Thirty at Athens, the bloody wars growing out of this partisan conflict at Thebes, and the worse than butchery of three hundred Koryrian aristocrats.

SECTION 107.—Already when Greece enters into the historical period, there are a great number of distinct and independent states without acknowledged hegemony or headship among them. They no doubt existed originally as small bodies of kindred people who, through long feuds and petty wars became united into the larger, though still comparatively small, aggregates, with which the historical period begins. These little states acknowledged their kinship and sometimes united in small confederacies with a specific object in view, but they were not bound together by any permanent political organization. No one seems to have made head against the rest so as to deprive them of independence, and no foreign power, if it ever attempted, had succeeded in subjecting them. In these early times when there was little navigation, and when that little crept close to the shores and ventured only a little way from home; when roads were primitive and methods of traveling clumsy, and mountains were almost impassable for commerce and for armies, the chances for maintaining political isolation were very great. The topography of Greece was especially favorable for such isolation, since so many of the autonomous states had for

their seat little patches of territory either surrounded by water, or enclosed by mountains, with no ready access to one another in early times. This period of political isolation of petty states, cities, and islands seems to have persisted so long that the habit of autonomy—of independence in government, each little state for itself—became organized into a constitutional instinct. How far this contributed to the ultimate greatness of Greece it would be difficult to say; perhaps the emulation and rivalry, and the hard knocks which they gave one another, may have acted in some respects as a stimulus to Greek evolution. The injury that it did is manifest enough. Autonomy antagonized empire. Autonomy prevented even hearty and needful confederation, and without steady and persistent co-operation for the great ends of national existence, Greece could not do what seemed to lie so easily within her reach. Although Sparta was more than once the leading power in Greece, yet did she make it her especial mission to urge upon each and every Greek state separate government (by oligarchy); and this political isolation seemed to comport with their ineradicable instincts, for the Greeks were never a united people.

In Grecian history we may clearly see what those forces are which integrate states and peoples. Already had the Persian empire swallowed up the Greeks in Asia Minor, when it threatened the Greeks in Europe. The autonomous states made an effort to unite for the common defense, and to a certain extent were successful. So far as mutual co-operation and the interchange of thought and contagion of feeling under this stimulus contributed to the advance of Greek civilization, it was due to pressure from without. Danger from Persia made unity of effort a necessity. In the conduct of this war, the activity and executive efficiency of Athens made her a great naval power, brought her into prominence, and gave her prestige among the weaker states of Greece. Athens became the head of a confederacy whose members were to contribute men and money to the common defense. This may be regarded as a nation in an incipient form. It was organized to protect Greece against Persia, but

no sooner had the danger passed away than the virus of state autonomy resumed its wonted activity, and members became remiss in the discharge of their confederate duties. When members of the compact became recusant it devolved on Athens as its head to enforce submission. Recusant states were brought to a sense of their confederate duties by force of arms. This resulted in actual empire—a sort of fragmentary empire under Athens in the midst of the Grecian world. But the integrity of this union was not long maintained, the autonomous proclivities of its members, and of other Grecian states, with Sparta at their head, first contracted the limits of the Athenian empire, and then broke it in pieces. Sparta preached autonomy during her campaign against Athenian power; but when she overthrew Athens and found herself superior in Greece, she very naturally played the rôle of an autocrat. Her general, Lysander, subverted the Grecian democracies and set up oligarchies in their stead with a Spartan harmost or governor and a Spartan garrison, to make sure that the governing should be done in Spartan fashion. Here was virtual empire again. If now the Greek mind had been equal to the conception of comprehensive political organization, there might have been Greek nationality, whose integrity at home and strength abroad would have been invincible. With less penchant among Greeks for state autonomy, and more brain among Spartans for political combination, and there would have been no Alexander the Great and no Roman Empire.

The order of events in the creation of an empire appears to be something like this: Pressure from without leads to organization within for the purpose of resistance; while the ambition of a conquering state with sufficient command of organizing genius, throws the net of political union over the conquered, more passive, or weaker states, for security at home and additional conquests abroad. Grecian history shows strikingly how fear of danger from without may coerce reluctant states into union for defense; but it was reserved for Roman history to illustrate how ambition and the organizing instinct sword in hand might create an empire.

SECTION 108.—We have seen how the Greek love of isolated state government antagonized political unity, and prevented the formation of a Greek empire. The result was the constant war of Greek states with one another, remitting only from war within, and then not fully, when there was an enemy without to repel. No sooner had an individual state become comparatively flourishing and powerful than jealousy and fear would arise in the breasts of neighbors, when a league would be formed against it to curtail its resources, and keep its power within bounds. Sparta was greatly troubled when Themistocles fortified the Piræus, and afterwards when Pericles built the long walls of Athens. Thebes so hated Athens that she wished the city annihilated at the close of the Peloponnesian war. Afterwards Athens helped Thebes against Sparta, but as soon as the brilliant achievements of Epaminondas made Thebes a power in Greece, Athens became jealous and envious, and acted under the stimulus of these petty motives. There is no lack of such examples in Grecian history—of jealousy, envy, hate, battle, growing out of the Greek doctrine of state sovereignty.

A single state, however, was seldom pitted against a single state, the war was usually between two leading States and their confederates. The Peloponnesian war, with Athens and Sparta as the leading powers, and with the other states of European Greece on one side or the other, affords the type in exaggerated proportions of the Grecian internecine wars. This was more general, lasting, and destructive than the numerous other wars in which a part of the states were neutral and merely spectators of the conflicts. The several forms of Greek alliances and the more or less limited extent of their acceptance by the states, constitute a singular net-work of variable complication. The autonomous states may be regarded as political atoms with unlike degrees of affinity for one another. They united in unstable compounds which readily decomposed and formed into new compounds. These might attract one another and form larger aggregates, or they might repel—and repulsion was almost sure to prevail. A larger state might associate with smaller states guaranteeing

the autonomy of each, and several such states acting as self-sovereign might form an alliance. Or, a larger state might have smaller states for dependencies forming a little empire, and these little empires might be dependent on a still stronger state as the head of a larger empire. When this, as we have seen, once obtained under the imperial supervision of Athens, the opposing power was an alliance between autonomous states under the headship of Sparta.

There was abundant opportunity for the play of variable segregation and aggregation among states and cities which numbered between two hundred and three hundred. Indeed, a very few states may illustrate such complication as to render it no easy task to form a distinct picture of it in the mind. Thus, at one time, Athens was allied with Sparta and fighting Thebes; Sparta was allied with Athens and fighting Argos and Thebes; Thebes was allied with a part of Arcadia and with Argos, and fighting Sparta and Athens; Argos was allied with Thebes and Arcadia and fighting Sparta; there was division in Arcadia, but most of its cities were allied with Thebes and at war with Sparta; Ellis was friendly with Thebes but unfriendly with Arcadia, an ally of Thebes.

SECTION 109.—If there had been cordial union between the states, Philip could never have made headway against the liberties of Greece. It was not merely that Sparta battered away at the Athenian empire for twenty-six bloody years till it fell, but when the Olynthian confederacy arose, she crushed that; and Athens no longer a master-builder in Greek nationality was now mean enough to take up the work where Sparta left off, and maintain by force the isolation of cities which were struggling to unite their strength in the Olynthian confederacy. Had these cities been permitted concert of action in a common cause, Philip would not have broken through so easily, if at all; but as it was, he cut them off one by one, and thus successfully made his way into Greece. The opposition to Philip at any time was never more than a fragment of Greek power brought together under the momentary stimulus of danger; hence Greece soon

became the helpless subject of a barbarian conqueror. Macedonia was passing through the upward, while Greece had entered on the downward, curve of historical movement; and both changes were taking place amidst, and were equally due to, the storms of conflict.

In the long struggle between nationality and autonomy, the latter won, and the seal of its victory was the ruin of Greece. It is true that, in a generation after the defeat at Chæronea, when the strong rule of Alexander had been broken under the dissensions of his successors, Greece enjoyed, under the liberality of Demetrius, a period of comparative independence which was employed in precisely the old way, in the attempts of one party to build up, and another to pull down. The Achæan League was formed to defend Greece against Macedonia and the Romans; but Athens never joined it, and Sparta became an unwilling member. This league was a union like that of the United States (Freeman); and when Aratus came to do it noble service by word and action, it was again Sparta that incurred the infamy of overthrowing it. Cleomenes, who had divided his own and others' lands among landless Spartans for the sake of Spartan equality and the revival of Spartan interest in the glory of the commonwealth, yet fought to overthrow Aratus' scheme of a Peloponnesian league, a measure of real statesmanship and of far greater value than Cleomenes' agrarianism. When Aratus was overcome by Cleomenes, he formed an alliance with Antigonus of Macedonia, which proved successful in the overthrow of Sparta for the first time in history; but Greek independence was now in worse condition than before. Soon afterward Macedonia was conquered by the Romans, and then Greece succumbed to the arms of Metellus and Mummius, and became a part of the Roman empire.

SECTION 110.—The greatest elements of Pan-Hellenic unity had not been political, so much as religious and social. These were kinship, the use of the same language, the same gods and myths, and the great Hellenic games, the Pythian, Isthmian, the Nemean, and especially the Olympic. But while these great

festivals were a practical element of Grecian brotherhood, they could not have had the charm of interest they inspired, had it not been for the Grecian love of contest. Whatever virtue they possessed for the good of Greece, was dependent, from our point of view, on that central force, the fascination of strife.

A sort of Hellenic unity early took form in the organization of the Amphictyonic Council, which consisted of two members from each of twelve races of the one great Hellenic family. One of its earliest oaths bound the league not to destroy any Amphictyonic town, nor to cut off any such town from running water. But this assembly was religious rather than political. It had no power to enforce its decrees, as Grecian history abundantly shows. While it may have maintained its formal integrity, Greece was torn to pieces by internal dissension. "A power which can be defied with impunity is no power."—(J. F. Stephen); and the Amphictyonic body without the sword had little weight as the missionary of peace. The belief of the Hellenic races in their community of origin, their use of the same language, their great festivals, their consultation of the same oracles, their rehearsal of the same poems, their Amphictyonic assembly, all told for Grecian brotherhood, but hardly weakened, much less neutralized the penchant of Greek peoples to become embroiled with one another.

We get from their history the impression that conflict was the prevailing idea among even the best of the Greeks. Brasidas, the Spartan, said: "We are a few in the midst of many enemies, and can only maintain ourselves by fighting and conquering." Epaminondas said that Thebes could only hold her ascendancy in Greece by maintaining an army well trained and active. Philopœmen, a successful defender of the Achæan League, despised those as worthless who were not versed in the art of war. Sophocles makes Ajax say of his son:

"Bring him this way; for if he be the son
Of Ajax, the fresh blood that hangs about me
Will not affright him; he must learn like me,
In earliest years, the savage laws of war,
And be inured to scenes of death and slaughter."

Demosthenes affirmed that it was the interest of Athens that Sparta and Thebes should be weak. That reveals a great deal; but one would suppose he might have thought differently in the presence of Philip at Chæronea, if Sparta, and Thebes, and Argos, and all the other cities of Greece had been strong, and had acted as if their interest was one with that of Athens, as indeed, in the modern economico-political point of view, it was.

SECTION 111.—At the time it occurred, the Persian invasion of Greece no doubt seemed to be a dire calamity unmixed with good. But the very danger bore on its wings blessings to Greece. It brought a large portion of the Hellenic people into active sympathy with one another, and stirred within them a heroism of endeavor which left them more willing and able after than before the war, to achieve results in other fields of activity. It was the vigor and triumph of successful resistance, the momentum of aroused energy, this being one of the ways in which conflict tells for a higher order of execution. It is true that, while Athens was conspicuous for her wealth of intellectual production, Sparta remained inactive and obscure, a result which is to be attributed in part to the multiplied forms of contact in which active commercial relations bring a people, and in which Athens had pre-eminently the advantage. It is a general fact of history that commercial peoples are more progressive than isolated peoples, such as inhabit mountain districts and little frequented islands. Athens was in free communication with her neighbors; Sparta, by her Lycurgan institutions, shut herself up and maintained her barbarism in spite of the progressive activity of other states. The diversity of incident forces which fell on Athens strengthened one another and told for her development; having shut out most of such forces, Sparta could not be jogged out of routine by the Persian invasion, or indeed, by any great event of her history.

SECTION 112.—Macedonian ascendancy and the empire of Alexander were unfortunate. No doubt the contact of peoples in the course of conquest was attended with some good in the form of intellectual stimulus. Peoples were made acquainted

with one another, and the facilities for commerce were somewhat extended. The knowledge of geography was greatly enlarged, and mankind had better ideas of the world in which they lived. But the empire was too short-lived to develop to the full its capabilities for good. The force of repulsion among its members was greater than their cohesion, and they parted company in the midst of great political disturbance. In Macedonia and the other states of Alexander's empire, after his death (as indeed in all previous times), was exemplified the fact so general in ancient history, that in contests for power, the most audacious and unscrupulous were almost sure to be successful, while by means of assassination and other forms of violence, the milder and weaker contestants were put out of the way. Here was political selection in a free fight for the ruling power. Why should it not be so? The fights were free whatever else was bound. Fights always had been free ever since the origin of man on earth, and long before, and the strongest and most wily survived, while the simple and weaker went to the wall. By habit and heredity this shaped the character of surviving peoples. Shrewdness, violence, unscrupulousness were the results of selection which was no doubt perfectly natural, and such as were most largely endowed with these capabilities came necessarily to the top as rulers; and so the strong were held to be good, and the weak bad; and all this occurred and only could occur by virtue of conflict. By conflict nations rose and fell. To conflict must we refer the evil; and without conflict the good could not have been. Blot out from our conception of causes the various forms of antagonism, and our conception of man's career would be reduced to that of a strifeless blank. "Inconceivable as have been the horrors caused by this universal antagonism which, beginning with the chronic hostilities of small hordes tens of thousands of years ago, has ended in the occasional vast battles of immense nations, we must nevertheless admit that without them the world would still have been inhabited only by men of feeble types, sheltering in caves and living on wild food."—(H. Spencer, *Popular Science Monthly*, November, 1880).

SECTION 113.—Ever since mankind became capable of critical thinking, has there been war within the domain of mind between what was thought and what was believed. The earliest traces of this struggle under the expansion of the Greek intellect, possess an extreme interest in being so precisely like what is at this moment going on in the intellectual world. When the Greeks awoke to historical consciousness, they were in possession of a vast inheritance of myth which involved such inconsistency and improbability as to give offense to the rational side of character then in course of rapid development. These myths were allied with religious and patriotic feeling; they had for ages been implicitly believed; at all times in Grecian life had they floated in the social atmosphere as an essential element of education,—proclaimed by poets, declaimed by rhetors, rehearsed by the people, built into imposing religious forms;—all youth received and assimilated them as a part of their mental constitution. This was as true of philosophers and learned men as of others; but while as children they might have implicit faith in the current stories, yet as men they liberated an intellectual force which unsettled this infantile faith. There were fabulous places as well as fabulous incidents; and when the extension of geographical knowledge extinguished the places, it made trouble with the legends.

According to those primitive stories, all natural phenomena as well as all human affairs were managed by the capricious will of the gods in a manner at once grotesque and contradictory. Observing men saw that there was regular succession in nature, and that it was probably taking place without special intervention of the gods in any part of the chain of causation. Perhaps, the first conclusion after the dawn of this new light was that in old times, it was done differently. The test which they applied to the present refused, under a revolt of feeling, to apply to the past. Arrian and Julius Cæsar discarded the notion of contemporary Amazons, but believed in their existence in former times, as Pausanius discredited the new miracles, but believed in the old. But a still further advance of the critical faculty would organize

revolt against such explanation, and look out for some other method of dressing up the legends into fitness for companionship with rational thought. The greatest absurdities would be lopped off, and the most palpable inaccuracies neutralized by some ingenious conceit. Two systems of interpretation were adopted to retain substantially the patrimony of myth, and at the same time satisfy the ever more exacting rationality of mind. It was declared that the mythical stories were the exaggerations of fact, and that by trimming off the superfluities, there would remain a nucleus of history worthy to be received. There was nothing like historical evidence on which to present these truncated myths to good society as historical realities, but it was agreeable to the Greek mind to give them entertainment as such, and this was a sufficient reason why they should not be thrown into the common limbo of infantile and discarded things. Another method was to allegorize the fictions, as if they had been invented by philosophers who meant to bury a deep meaning in stories about heroes and gods.

The obvious conflict between the mythical stories and the canons of criticism was a ghost that would not down. It haunted the Greek mind through all the period of its greatest intellectual activity. The difficulties of the problem only intensified the importunity for its solution, and the greatest minds addressed themselves to the task of reconciliation. Grote (our principal authority for the preceding statement) says that, "To accommodate the ancient myths to an improved tone of sentiment and a newly-created canon of credibility, was a function which even the wisest Greeks did not disdain, and which occupied no small proportion of the whole intellectual activity of the nation." All of which was the result of that consciousness of conflict between ideas which had come through different channels into the Greek mind, and had found lodgment there as next-door neighbors.

CHAPTER XV.

ROMAN HISTORY—THE REPUBLIC.

SECTION 114.—Very early in the evolution of human society does the individual find himself limited in the exercise of his sovereignty; he discovers that his own will is not supreme. This is well shown in primitive Italy. There were the individual's obligations to his clan, the clan's obligations to the canton, the canton's obligations to the league. The higher obligations met and hedged in the range of the lower; hence, absolute freedom was and is a chimera. These limitations, this self-denial and self-control led to what is regarded in history and life as a good. The firmest compact gave the greatest strength to resist invasion or to wage aggressive war; hence the best organized political unity most readily enlarged the area of its activity (Bagehot); it conquered, became still stronger, and was in the way to play a great rôle in history. This is exemplified in Latium, the originally organized kernel of the Roman power that was to be. First, Rome proper waged war with the neighboring communities and incorporated several of them, enlarging her territory from the size of a township to that of a county. A league was then entered into that "there shall be peace between the Romans and all communities of the Latins as long as heaven and earth shall endure." This peace at home meant more effectual war abroad.

SECTION 115.—Italian soil did not escape the conflict between different peoples in commerce and civilization. The Carthagenians, Hellenes, and Etruscans struggled for supremacy in the adjacent waters, resorting to piracy as well as to the legitimate means of naval conflict. While the Etruscans were a people of Italy, and both Hellenes and Carthagenians had colonies and

carried on industries on Italian soil, their commercial struggle could not but exercise a material influence on the development of the various elements of Italian power. A sort of natural selection by the warlike contact of the early peoples of Italy brought into the foremost position such as were capable of acting with a unitized and persistent purpose. Settlements on the coast and in the rich plains grew into sufficient strength to attract and repel, thus exercising an influence on the ultimate destiny of Italy; while the people on the mountains, dwelling far apart, never acquired sufficient weight by coherence to exercise either a disturbing or controlling influence over their neighbors.

SECTION 116.—But this political and social aggregation which gave self-preservation at home and conquest abroad, and afforded an essential condition of national evolution, was by no means inconsistent with perpetual strife within. This was eminently the case in Rome.

The Romans tired of life-kings; the monarchy came to an end; and in its stead two consuls were annually elected, each with the power of a king while in office. There was a perpetual annual succession of two kings, instead of one for life; the arbitrary power of the one should neutralize the arbitrary power of the other and save the people from the evil of irresponsible and unchecked tyranny. This might work very well for the patricians, the ruling class, the representatives of the primitive clans, the aristocracy of Rome. But there sprung up another class, freedmen, foreigners, common people or plebeians who conceived that they should have political privileges as a means of defense against the oppression of the ruling order. Here was the ground and origin of social and political contests which lasted, with only an occasional lull, for many generations. Armed revolt against unalleviated oppression was necessary to secure the recognition of the people's right to exercise political power. A new office was created to meet the case—the tribunate of the people. Two tribunes were annually elected who had power to negative any administrative act of the consuls.

Here were four offices of the Roman government each clothed with almost equal authority, each supreme with little division of function, and hence, we might surely infer, if we did not know, that the action of the government should illustrate internal disension quite as much as executive unity.

Early in the "commonwealth" of Rome, influential plebeians were admitted to the senate without the privilege of taking part in its discussions. It was only when the contest had been waged for sixty years longer that plebeians were permitted to speak in the senate. This privilege was at last granted to the tribunes, who for this purpose were allowed to occupy a seat in front of the senate chamber. The first plebeian magistrate was elected as one of the decemviri just sixty years after the expulsion of the Tarquins and the setting up of the commonwealth. A struggle of eighty-three years more was necessary to prepare the way for the election of a plebeian as consul. Eleven years later a plebeian might become dictator, and in a few years more, the censorships and prætorships, which had been created and rigidly guarded as aristocratic offices, were opened to the plebeians, one hundred and seventy-three years after the founding of the commonwealth. But this by no means ended the social warfare of these two orders of Roman society. Even after marriage had been legalized between them, and plebeians had been admitted to the highest offices in the state, plebeian wives were not recognized by the "patrician dames" as social equals; and spiteful opposition was kept up by the patricians long after their monopoly of certain great offices had ceased to exist. The like caste-prejudice obtained in some of the Grecian states, against the new families by the old who could trace their lineage back to the gods. Whence it appears that the modern trick of assuming personal superiority on the basis of some factitious merit is of very ancient origin and not really a product of modern degeneracy.

This long conflict was not based wholly on the distinction of blood. Many of the common people became wealthy, and then as now wealth gave power and prestige. Wealth

and rank naturally united by a common sympathy against the comparatively poor. The successful plebeians did not always use their power to lift the burthen of oppression off their less fortunate brethren. Owing to unjust laws which, as usual, favored the law-making classes, hard times and suffering were perpetual rather than occasional. Dissatisfaction made itself felt; revolt was often threatened and sometimes executed; hence measures for the partial relief of distress.

SECTION 117.—Notwithstanding all these forms of discord within Rome, she was slowly gathering strength to become the mistress of the world. Here, as elsewhere, is illustrated the fact that, in every aggregation of human units there are explosive forces within ever ready to burst it asunder, while counter-forces, be they in the form of internal sympathy and cohesion or external pressure, bind it together, and with a hoop-like function prevent it from flying to pieces. It may seem paradoxical, but this hoop-like function was sometimes opportunely exercised for Rome by the invasion of an enemy.

The earlier history of Carthage, Rome's great enemy, illustrates this view. The mother cities, Tyre and Sidon, were not warlike, and were wont to pay tribute rather than sustain a siege. The aggression of the Hellenes in the waters of the Mediterranean put the Carthagenians on their defense for a sufficient field of commercial activity, and for their very existence as a commercial people. This developed a more restive spirit among the Phœnician people than was usual with them. On the downfall of Tyre, many of her citizens came to Carthage and brought the skill of the old to be united with the energy of the new to the building up of their adopted city. But wealth was not the only source of Carthaginian power; there was discipline. The hard knocks she had received forged and bound together the elements of that power which enabled her to become so distinguished in history.

When Hannibal, a product of the Carthaginian stock, invaded Italy with such brilliant results, he was able only to shake and shock, but not to rupture (except in a partial manner) the Italian

confederacy. And although Italy lost a half million of her best men in the war with Hannibal, there is no doubt but she was abler soon after the close of it to cope with Macedon and western Asia and Carthage, than if she had not learned in the schools of Hannibal. By contrast, the surmountable forms of adversity, in various ways, give strength.

More particularly, what were the explosive forces within Rome? The invidious distinction between different states of Italy in regard to their connection with the government, and their voice or want of voice in the same; the concentration of political power in the nobility of Rome, in consequence of which the voting citizens with the semblance of power, were reduced to a nullity; the oppressions by the rich and high-born of the poorer classes, and the opposition, agitation, and struggle for reform which this constantly engendered; the corrupting power of wealth in Rome, breeding a sordid spirit, blunting the better instincts of our common nature, crushing out of existence a considerable portion of the once independent rural classes, and at the same time giving rise to a rabble class into which facile demagogism struck its roots and flourished luxuriantly;—and to these must be added the liability to corruption of Roman governors abroad, taking bribes under specious names and tempted to rule for their own emolument rather than for the good of their subjects, and withal robbing the people under the pretext of governing:—these were the principal of the weakening, discordant, and disruptive forces within. It is not so easy to designate the forces which antagonized these and bound the empire so firmly together. That they existed the fact of Roman unity so long maintained abundantly attests. Physical endurance, persistency of purpose, pride of country, strict organization, the wont of rule, the awe of authority, Roman confidence in Romans, their system of conventional repression, their social severity and self-denial—each of these had something to do with the supremacy of Rome; and all were more or less strengthened and directed by the storms amidst which the Roman power had its origin and development. The conflicts within and without

Rome were the conditions from which Roman greatness sprung.

Roman development proceeded from the play of antagonistic forces; and, great as that development was, it was anything but unmixed good. Along with the gains came losses. With wealth and power came the indulgence of ease and luxury with all the train of attendant evils. With a rich and ruling class at one extreme was developed an indigent and dependent class at the other. Original simplicity, frugality, and manly integrity were displaced by sordid selfishness, the vanity of display, and the intrigues of demagogism. The diseases were engendered which ate into the vitals of free Rome and doomed her to death in the midst of her splendors.

SECTION 118.—Human hunts had been carried on to procure slaves for the Romans. The antagonism between slave and free labor quite annihilated the latter in Rome and deprived it of all dignity in Italy. These white slaves of Italy and Sicily suffered a fate which is hardly equalled in the annals of human cruelty. Often compelled to labor without the means of sustenance in supply, they had to plunder in order to live. Slaves became robbers. Slaves were compelled to kill each other in the arena for the amusement of the people. Slave insurrections were frequent; and bands of desperate men with arms in their hands were sometimes a match for the Roman legions. The rich abetted slavery, and slavery extinguished the middle class, the worthiest citizens of Rome. Slavery and war drove their victims into outlawry whereby was fed and strengthened a system of organized piracy on the Mediterranean. Piracy became an institution with a definite polity, and it assumed to treat on equal terms with kings. It played at sovereignty and held itself to be as legitimate as Roman oligarchy or Asiatic despotism. All were selfish, cruel, and aggressive, with disregard of others' rights, and if the pirates suffer in comparison, it is for their comparative want of the counter elements of activity by which the state takes form as the shield in some measure of social rights and the home virtues.

SECTION 119.—At length the union of the Roman states which had stood the shock of defeat at Cannæ and the years of fearful struggle with Hannibal, gradually became weakened. States became dissatisfied with their exclusion from active share in the government of Italy, and out of this dissatisfaction grew the social wars in which were destroyed millions of property and hundreds of thousands of people. After this came the storms of the great civil war; and at length, the internecine conflicts which shattered the commonwealth were stilled under the fatality of empire.

CHAPTER XVI.

ROMAN HISTORY—THE EMPIRE.

SECTION 120.—Under the empire there were two or three great centers of conflict. 1. That between the Roman power within and the barbarian power without. 2. That between the pagan and the Christian religion, the one being in its descending, the other in its ascending curve. 3. That between the so-called spiritual and temporal powers, the former struggling for the supremacy; this form of the conflict, however, not coming into full play till after the reputed fall of the Western empire, A. D. 476. These three great forms of conflict had their wars, battles, truces, treaties. There are also minor forms of conflict which do not come under these categories, such, for example, as the civil wars, and such as were fought out within the pale of the church itself.

The Roman empire, as we already know, was a development from small beginnings; and its additions were secured by over-coming. Continual conquest from generation to generation

developed a national habit of mind, till Romans were born with the penchant and power of conquest. It had become a faculty of the mind—"second nature," at any rate. This drift of tendency continued to produce its legitimate results till the Roman empire reached its utmost possible limits; that is, until the boundaries of the empire became so far removed from the central source of energy that the pressure from without could no longer be overcome, and an equilibrium resulted from the antagonism between the internal and external forces. Notwithstanding the incoherence within and the pressure from without, the integrity of the frontier was for some time maintained. All the numerous attacks made by the Goths, Franks, Germans, during the third and fourth centuries and previously, were for the most part successfully repelled, and when not, resulted in no serious detriment to the empire. But in the fifth century the result was different. The Goths under Alaric, the Huns under Attila, the Vandals under Genseric, successively overran and ravaged the empire. The Goths, and after them the Vandals (Teuton races), took and plundered the city of Rome, after which time the provinces constituting the Western empire were subject to the devastations of armed hosts of uncultured peoples, who contended with one another for the substance of Roman citizens. The catastrophe was precipitated by the compound pressure which was brought to bear from without. ⚔ Peoples were driving peoples against the empire. The base of support extended even to the eastern shore of Asia, and the aggressive forces accumulated on the border till the tension of resistance was broken, and the deluge of barbarians poured into the empire and over it. "The vast field of the Roman empire stood open for younger and more energetic nations to march in and take possession. And in the course of the fifth century, in all the Latin provinces of the empire, in Gaul, in Spain, in Africa, in Italy itself, the Teutonic nations did march in and take possession."—(Freeman.) This process was the reverse of that which prevailed when Romans marched into other nations and subdued them. In this great empire as in every political organization, great or

small, we have the play of two sets of counter forces—one which produces territorial growth, and the other which arrests it. It matters not what the causes of growth were, or what the causes of arrest were, the general fact still exemplifies the antagonism between two great classes of political forces. Those causes are not vague and metaphysical, but definite and tangible. As we have endeavored to point out, there were adequate causes for the development of Roman power; so were there adequate counter causes for the arrest of that development, for its gradual decline, and its final extinction. These minor causes, which co-operated to one end, the downfall of Rome, were not all developed outside of the Roman world, but mainly within it.

SECTION 121.—The civil wars growing mostly out of rival claims to the throne were a chronic disorder which greatly afflicted the empire during its decline. A single generation sometimes witnessed several of these demoralizing conflicts, as during the reigns of Constantine and his sons. It was the moral stamina of the government even more than its physical power that suffered from this civil discordance. Losses of men and property are soon recovered while there is life and energy among the people. "Gold and silver may be consumed; but virtue, constancy, force and poverty are inexhaustible."—(Montesquieu). Wealth and numbers count little for national greatness unless the people from generation to generation are animated by a steady purpose, which in spite of temporary reverses, persists till it carries its end. It was this persistency of purpose and elasticity of vigor which recovered from defeat and changed reverses into success, as in the wars with Carthage and with Pyrrhus, that had so much to do with establishing the greatness of Rome; and it was the corrupt relaxation of this constancy of purpose that had so much to do with the fall of the empire. The national character had become debauched and weakened. For want of the necessary sustained tension of mind there could be neither conquest nor successful defense.

Rome declined because the old Roman stock had become depraved through the surfeit of power and wealth, and because new peoples had come to take their place, who knew little of, and cared nothing for, the old religion, and who were not inspired by the old traditions of Rome.

SECTION 122.—The causes of decline are obvious enough. They are always to be found in company with the long-continued possession of power, and the over-plenty which power may command without paying its price in industry. Emulation in virtue may create power and command abundance; but rivalry in luxurious display which this abundance makes possible, will corrupt, enervate, and at last destroy all moral energy. The good so incompatible with this crassness of vanity will not abide in its presence.

Right here a point may be made, by no means new, but vital in what aims to be the philosophy of this book. The repugnance to simplicity, self-denial, and rigid discipline is compensated by the vigor they give and the success they insure. On the other hand, the attempt to make the most of life by continual indulgence results at last in the penalties of exhaustion, weakness, and disaster. The way for a high character to make the most of life, is to practice the unselfish virtues of life. We cannot have both self-indulgence and real greatness. It is only by heroic conflict with the enemies to be overcome that one may earn title to the glory of a triumph. Life is a continued series of contests in which nerve and steadiness of purpose are indispensable to success. There is a radical antagonism in the constitution of things, the penalty of which life must pay. Sunshine is not perpetual; it must alternate with cloud and storm. It is no groundless whim of superstition that with a paradise there must needs be a purgatory. The evil must be endured that the good may be enjoyed. This is even more true of empires and nations than of individual men.

SECTION 123.—But Rome forgot the price of excellence, as all great nations do in time. Prosperity came as the reward of stern virtues; and the old stock of Romans weakened and

declined for misusing the privileges of their good fortune. And as the moral stamina of the Roman stock declined, the infirmities inherent in the constitution of the empire made themselves felt for evil more and more. The nationality of the empire was never a unit; it was a combination of nationalities bound together by an arbitrary power with its centre at Rome. The numerous nations of the empire might, indeed, be proud of the name Roman, as long as success and glory attended it, and as long as the power which bore it contributed to the general welfare of the people. But the administration covered so large an extent of territory, and embraced within its jurisdiction such a variety of peoples and interests, that its purity could not well be maintained. The government of a province for selfish ends and burthening it with a weight of taxes which was equivalent to robbery would eventually estrange the feelings of the people, and they would come to care little who their rulers were, whether Romans or barbarians. And this is just the state of things which at length came about. A new religion had invaded the empire successfully, and had come to stay even more surely than its physical invaders. In the West the ruling class adhered to the old religion while the people took to the new, and thus was the house divided against itself. There was discordance of sympathy and no hearty, united action. The government, the aristocracy, the people formed alliances with armed bands within the empire to promote their class interests. The invader had easy work to force an entrance, and no great trouble to hold what was gained. In the eastern empire there was more unanimity of feeling, and a more determined front was presented to the invaders. Rome succumbed more from her own weakness than from the strength of her enemies. "If any national feeling, or common political interest had connected the people, the army, and the sovereign, the Roman empire would have easily repulsed the attacks of all its enemies; nay, had the government not arrested the natural progress of its subjects by vicious legislation and corrupt administration, the barbarous inhabitants of Germany, Poland, and Russia, could no more have resisted the

force of Roman civilization than those of Spain, Gaul, and Britain. But this task required to be supported by the energy of national feeling; it was far beyond the strength of the imperial, or any other central government.”—(George Finlay, *Greeks under the Romans*, 105).

Such had been the extent of national demoralization that Rome was sometimes invaded by foreigners under the command of Romans, while the last defenders of the empire were not Romans but foreigners. Bad administration had paralyzed the industries, and those who cultivated the soil could not be spared to defend it. People who could pay taxes, must not become soldiers. Hence the army was made up of slaves, foreigners, and the lowest classes of the people; and it became the policy of the emperors to prevent all sympathy between the army and the people. But the fatal end and the long, painful road to it, proved that the arbitrary bond without the sympathetic ties of empire are not sufficient. If it had been, the perfect machinery of centralized government established by Constantine, would have perpetuated the empire forever.

SECTION 124.—In the later stages of decline Rome no doubt suffered from the prevalence of a religion which had not been identified with the rise and progress of Roman power, and which more than any other religion professed to despise the things of this world. The persecutions which the Christians suffered at the hands of pagan rulers must have greatly strengthened the tendency of the Christian mind to condemn the good things of this life for the better things which belong to the next. While this discipline gave vigor in certain directions, it did so, no doubt, at the expense of vigor in other directions. The austerity of character it was calculated to develop would have been favorable to great national results, if great national purposes had seized upon and united the public mind. But the discipline in question was incompatible with such national purposes, and whatever strength of character it may have given, was expended upon other aims. It had reference to personal interests rather than to affairs of State. It confederated people

in open hostility to some of the prevailing political maxims; and patriotism was not one of the virtues it cared to strengthen.

That great current of feeling which magnified the next life at the expense of this, led directly and legitimately to all-engrossing disputes about doctrinal points upon which it was supposed the integrity of religion depended; and out of these disputes grew mutual persecution by the sects of Christendom, with bloodshed and the diversion of energy from the vigor and integrity of empire. This mutual persecution did not begin till paganism was well out of the way, and political power had fallen into Christian hands. The conflict between the two great religions had first to cease before the conflict of hostile sects within the Christian church could begin. Here, for the first time in Roman history, came into full view the signs of unmistakable degradation by the loss of the secular spirit, and the fatal encroachments of the theological. This was true, not of one class, but of all, so entangling the masses of the people as to unfit them for those successes without which religion itself has no redeeming power in a national sense.

The schism of the Donatists with variable fortune divided the Church in Africa for three hundred years, and only ceased with the existence of African Christianity, which succumbed to Mohammedan power. Almost concurrent with the rise of the Donatists, and nearly a hundred years before the capture of Rome by the Goths, the Arian controversy arose to distract the Christian world. Emperors, prelates, laymen, councils were zealous in determining the exact truth, and in punishing such as would not receive it. The minds of men were directed to nice distinctions concerning the relations of the Son to the Father which no mind ever could or ever will understand. But it was none the less effective to excite disputes and stir up the angry passions of the disputants to end in mutual persecution, which according to contemporary witnesses was worse than the fury of savage beasts and equal to the discord of hell itself. After nearly five hundred years of profitless dissension, the Catholic creed which conformed to the decision of the Council of Nice

in favor of Homoousian, or the consubstantiality of the Father and Son, whatever that may mean, completely triumphed over the heresy of Arianism.

When the dissensions concerning the Trinity had been in vogue for a century, disputes about the incarnation of Christ were superadded, and continued to distract the Christian world for two and a half centuries. As the subject was one about which the disputants could know nothing, it afforded a well-appreciated opportunity for the display of pious zeal and dialectic skill; and every possible change which mental ingenuity could devise was rung on the doctrine of the incarnation and the nature or natures of Christ. Whatever was imagined as true became, through the necessity of its defense, of great importance to those who espoused it; and if strong enough they evinced their brotherly interest in others by compelling them to believe in like manner. The dispute led at length to the first religious war which Christians fought with each other, and thousands perished in this contest about a theological phantom.

The contest about the worship of images lasted for one hundred and fifty years and was actively engaged in by popes, emperors, and empresses. No less than eight councils were called to decree the truth on this subject. The decrees were both for and against as usual in cases of difference, recognizing or condemning the various shades of use and abuse which might be made of images. In this contest the spiritual power of the bishops of Rome came in contact with the temporal power of the emperors in the East. The spiritual dignitaries who supported the worship of images prevailed in the end over the temporal sovereigns who contended for the more spiritual forms of worship; and while the idolatry held its ground in the West, it came at length to prevail in the East.

We have here an example of the triumph of the ecclesiastical over the secular power. Pope Gregory II. had not failed rightly to estimate his strength when he hurled defiance at Leo the iconoclast. The discipline to which Ambrose, Bishop of Milan, in an earlier age had subjected an empress and an emperor was

a fitting prelude to what was afterwards to come in greater fullness. When the Roman empire was no more, there were other kings and emperors in the West to subordinate, and faithfully did the popes labor to this end. This was a long, long struggle, in which the general prevalence of ignorance and the superstition of the masses at length enabled the ecclesiastical power to assume and administer paramount authority in secular affairs.

The Paulicians arose in the seventh century and became a numerous sect in the East. They were persecuted by the Greek emperors, and Theodora, who had finally restored the worship of images in the eastern church, was bent on the extermination of the Paulicians. They were hunted down and many of them put to death. In desperation they took up arms, and uniting with the Saracens they endangered the very throne of the persecuting emperor; but they were at length successfully resisted, and afterwards became a moral rather than a military power. As such, subject to the inevitable changes of the centuries, they survived as an element which contributed to bring about the Reformation.

SECTION 125.—The factious hostility of the partisans of the several colors worn by the charioteers at the Roman games shows the facility with which mankind manage to get into conflict with one another. The government being autocratic, there was little place for continuous political partisanship; but since the pressure in human nature for a fight is so urgent, hostile factions were organized on the distinction of liveries in the circus. Many emperors of Rome took sides, and made the wrangle a matter of dignified interest. The contest was at length transferred with increased fury from Rome to Constantinople. During the reign of Justinian and Theodora, the hostility of the factions broke out in sedition, and blood flowed abundantly in the streets of the city. Justinian favored the blues, and the greens created an emperor to champion their cause. The throne of Justinian was in danger; and even after the greens had been beaten, the factions again revived their animosities to distract the capital city, and disturb the peace of the empire. There

were emperors so weak, and the factions so strong, that the former courted the latter as the chief support of the throne.

SECTION 126.—All these conflicts betrayed the demoralization of the Eastern empire, while they helped still further to develop its weakness. The East had not escaped the onset from without which proved so disastrous in the West. Large outlay and constant watchfulness had been necessary to keep the Persians at bay; the Crusaders had taken possession of Constantinople and dethroned the sovereigns; the Huns had invaded the empire; the Goths had overrun Greece in the third century, and Alaric had been in Athens before he pillaged Rome. The limits of the empire had been fatally driven in by one conqueror after another till it was without provinces. Constantinople was not capable of offering a manly resistance to the Turks under Mahomet II., and the city fell into Moslem hands; and with its fall the empire of the East was at an end.

SECTION 127.—The fact has been mentioned that Rome began under one religion and ended under another. In the first the religious forms had reference mainly to the affairs of this life with little regard to the next. Religion was made subservient to present and secular interests. In the system under which Roman power came to an end, faith and the priests had subordinated secular interests to the theological. The mind was diverted from the pursuit of great temporal ends, and this conspired with the political infirmities of the empire which already favored disintegration, to antagonize the interest in empire by a merely local interest in municipal rule. The contest between these two forms of interest was going on, silent and unsuspected during the decline of the empire, the general interest losing ground, and the local interest gaining, till it came about at last, that the parts which had been bound together as an empire, fell into municipal fragments with no common interest in one another. What, from Augustus on, had been for centuries an empire of cities and provinces, was at last dissolved into its component parts, and there was left no empire, but only cities and provinces. And what is worthy of note as something more

than a coincidence, is that after the Roman power became Christian the dignitaries of the church gradually obtained control of the municipal governments, and with their own interest and the interest of their people, in doctrinal disputes, there must needs be less of interest in the general welfare of the empire with consequent tendency to weakness and dissolution. The Roman empire had no doubt facilitated the spread of the Christian religion, but when this religion became degenerate through its petty disputes and the possession of power, it hastened rather than stayed the decline of the empire. But in all this the Christian system was but the victim of still deeper elements of deterioration which were slowly but surely eating away the vitality of the political organism. The appointment of incompetent favorites to places of trust and honor; administration to please the sovereign, which oppressed the people; wrong inflicted in the name of justice; legalized monopoly in manufacture and trade; the protection of privileges; fiscal exactions ruining agriculture and discouraging industry;—the stream of government could not rise above its source, and there was no power on earth that could arrest the downward tendency.

History shows that among all peoples not crystallized in permanent forms, political power is rhythmic in its manifestations, and however great at one time any particular form of it may be, it is sure to fall into decline, if not by one set of causes, then certainly by another. "As a rule, the influences which have accelerated a nation's progress and brought it to the apogee of its social existence, end in precipitating its ruin by their further action. Every direction which humanity takes has almost always something of evil in it, is limited in its very nature, and cannot stand its extremest consequences. All earthly existence bears in itself, from the first, the germs of its decay."—(Roscher, *Political Economy*, Vol. II.) The Roman power is perhaps the grandest exhibition yet given in history of the operation of this law.

SECTION 128.—In all this sea of conflict amidst which the Roman empire declined and ended, are there not to be found

germs of a new birth? Without these conflicts there could have been no new birth—none of this modern civilization of which we are so proud. A people left to itself has no innate force necessitating development out of an inferior into a superior condition of society. The endogenous development of which Emerson speaks is true neither of individuals nor of nations. Nations, like individuals, must be jogged out of routine, else they would forever run in the same rut. Dr. Whateley and the Duke of Argyll are right in their views that no people ever raised itself unaided from the savage state. Peoples only rise by conflict with peoples bred under different conditions of life, and they only take polish by rubbing against one another. Thought can only assume renewed energy by mental contact. There was no lack of those disturbing forces so necessary to the breaking of routine throughout Europe during the period which intervened between the close of the old civilization and the rise of the new. No adequate picture can be drawn of the mingling and contact of peoples by immigration and war during this period. Successive waves of Huns, Alani, Bulgarians, and other Scythian races; numerous families of Sclavonians; devastating hordes of Germans,—Gepidæ, Goths, Vandals, Heruli, Burgundians, Lombards, Franks, Suevi, Angli, Saxons; the warlike followers of Mahomet,—Turks, Saracens, Moors;—all these with the Romans and natives turned Europe into a common drill-ground, marched, counter-marched, and fought. Not a province but was repeatedly overrun; and permanent settlements were made in many parts of the empire. Gibbon observes: “At this disastrous era of the ninth and tenth centuries, Europe was afflicted by a triple scourge from the North, the East, and the South: the Normans, the Hungarians, and the Saracens sometimes trod the same ground of desolation; and these savage foes might have been compared by Homer to the two lions growling over the carcass of a mangled stag.” The Saracens, Moors, Franks, and natives contending in Spain; France fought over again and again, and Goths, Burgundians, and Franks permanently superimposed on the Gallic population; the Latins, Greeks, Saracens

Goths, Huns, Vandals, Lombards, in a bewildering maze of hostility in Italy, and Rome kicked by fortune like a foot-ball from one conqueror to another;—this made Europe and the centuries active but sorrowful. Add to this the excitement and sacrifice of the crusades, and the contact and acquaintance through them of the East and the West, enlarging men's ideas and giving new direction to human energy; and then the struggle between the spiritual and temporal powers, the passionate discussion of intractable questions in theology and the bloody contests from the same; the contact of creeds and religions and the succumbing of one to another; the meeting and coalition of peoples of unlike manners and their efficacy for mutual modification; the change of commercial centers and the rise of commercial cities; the advance of Arabian science from the West, and of Greek literature and philosophy from the East, meeting in favorable centers and generating a new intellectual career for the whole western world;—there was indeed a bewildering complication of disturbing forces both for good and for evil.

Progress takes place by the continual complication of results, and this is facilitated, first, by opening up the channels of communication between peoples along which the forces of action and reaction may play; and secondly, by the remembrance of events and results which teach by resemblance and contrast, and enable each succeeding age to avail itself of a large variety of experiences. Such use is not always made by any means; but even during what is called decline, experiences are accumulated to be made available in the subsequent renewal of upward tendencies. It is to this complication of utilized experiences that our civilization largely owes its superiority. Greek civilization was a far greater prodigy than our own; little is known of its foreground. The renewed activity of the civilizing elements after the northern barbarians had covered Europe with ignorance and with certain forms of degradation, was greatly facilitated by what remained on record of the Greek, Roman, and Eastern civilizations. The contact of peoples had weeded out the physically degenerate, and the intermingling and

intermarriage of peoples had broken up the uniformity and permanence of race-characters, and had overturned or modified long-standing customs and habits, thus preparing conditions for a new development of psychical, social, and political forms. Much that contributed to the downfall of the old, contributed also to the building up of the new. It would be a study of interest, though one of labor and difficulty, to trace the lines of conflict which lead up from the closed battles of the past to the new battles and the new triumphs of existing civilization.

CHAPTER XVII.

EARLY ENGLISH HISTORY.

SECTION 129.—The known history of Britain begins with the descent of Julius Cæsar on the island. Late in the first century of our era most of it was brought into subjection by the Roman legions under Julius Agricola. Roman civilization went with Roman rule, and Britain had cities, roads, industries, commerce. A change came over the great empire. She lost not only the power of conquering and civilizing new provinces, but even the power of protecting Italy against the inroads of barbarians, and the provinces were left to take care of themselves. The Britons had been for over four centuries a subject people, and had lost the habit of self-defense, so that when they were hard-pressed by wild and warlike neighbors, they appealed for aid to some German pirates who were cruising off their coast, and who went by the name of Englishmen. The new allies became the worst of enemies, and turning their arms against their employers, exterminated them, and with them their laws, manners, and religion. It took more than one hundred and

fifty years to do this; but it was done thoroughly. Paganism and barbarism prevailed instead of Christianity and Roman civilization.

No sooner, however, had the English secured several provinces in Britain than they turned their arms against one another. They disputed in bloody encounters for the over-lordship; as the Greeks before them, and the Latins in earlier times disputed for the hegemony. In this struggle, as in all such, as one went up others came down. Armies were sometimes annihilated, and provinces sometimes swallowed up by another. Deira and Bernicia, long enemies, were united under one government and called Northumbria. Here was the nucleus of a power which grew apace and assumed the headship of the English tribes in a sort of provisional unity.

Missionaries from Rome and Ireland turned some of these pagan tribes into Christians; and the contest of religion assumed various forms. The Christian powers invaded the pagan. The princes and provinces of the contending religions made war on each other with a blending of political and religious motives. The Irish and Italian bishops contended for supremacy in ecclesiastical government, the latter winning it. Relations between the island and the continent became established by the ties of religion.

During the century of the Northumbrian ascendancy the Christian religion was established and crude beginnings were made in learning and literature. The seat of political power began now to drift to the southward. When Northumbria fell, Mercia, lying immediately to the south of it, and in the center of what is now England, rose into power under Effa, and for awhile held the over-lordship of these petty English provinces. And when in the course of this perpetual struggle the power of Mercia waned, Sussex, the southernmost province of the island, pushed its way to the head under Egbert, whose sway was so extensive that he styled himself the "King of the English." But the English were not allowed to have a monopoly of the contests for power in Britain. The Franks had already made

themselves felt; and now the Danes threw themselves upon the island with a will to win. They gained a foothold in Northumbria, in Mercia, in East Anglia, and it was with difficulty that Sussex, under its vigorous kings, was for a time able to maintain its integrity. But when the English to the north of it united with the invaders Sussex too went down, and the Danes, under Sweger, were masters of England.

SECTION 130.—These things stand out conspicuous in history; there are others which are more obscure, and others still which would not bear record of any kind, all of which rendered primitive England the field of discord and conflict as the only practical means to better things. The feuds of the rude families and tribes, private redress of wrong, trials by battle, the superseding of the hereditary nobles by the thanes, or war companions of the king, the sinking of freemen into slavery for debt or crime, the passing of the peasant-freeman into villanage, giving up his land to another for protection amidst the ruthless conflicts which everywhere raged without ceasing;—and so English history took its course along the channel of least resistance. This was illustrated when pirates annihilated the Briton, and then when they fought with each other for the upper hand, and afterward when other pirates invaded the island and gained the mastery. By a selection which was determined on a thorough trial of strength, the most persistently aggressive prevailed and took the first of all things.

After the Dane came the Norman, and he, too, subjected England and ruled it. After the Normans came the Angevins—the Dukes of Anjou; and they gave to England its sovereigns who contended with the native spirit of liberty. They were bad kings who did a great deal of good for English liberty by failing in their struggle to overcome it.

Whatever the form of political unity, it has always come about by a crushing process. It was so in England. The peasant-freeman had been subordinated to the English lord or thane; this lord in turn was pushed from his place by the Norman baron, and the baron was subordinated to the king. There was unity by the

strong chain of obligation for service on feudal conditions from the lower to the higher. It was to bind together and give strength for self-protection. But the scale of dependence thus established could not be maintained. The rise of new classes in society by the changes which commerce and thrift were bringing about, brought on new struggles which culminated in the charter of English liberty. When the English people had achieved a fair measure of both unity and freedom, it is to be reckoned as the outcome and reward of persistent struggle.

This conflict was a very complicated one. The king wanted to be absolute; the barons wanted supreme control within their own domains to rob or make war as their greed or ambition led them; the church wanted ecclesiastical control with a large measure of interference in secular affairs, and it was a subject of contention whether Rome or the church authorities in England should exercise these prerogatives; the middle classes in town and country wanted as much liberty as they could get; and the king was the one great power to be dreaded by all who valued their liberty. He used one class against another to secure the field for his absolute will. Sometimes the church, sometimes the barons were the champions of general freedom, till at last, all classes united against the king and the pope, and the barons with an army at their back compelled King John to grant the charter of liberty to the English people. But this turned out to be theoretical rather than practical, liberty on paper rather than in life, and it was only after generations of contest with sovereigns who disregarded its provisions that it acquired legal force and practical value. The more than thirty confirmations it received from time to time, show what persistency of effort was necessary to give efficacy to Magna Charta.

CHAPTER XVIII.

THE FEUDAL SYSTEM.

SECTION 131.—It is trite to say that mankind under like circumstances of culture and surroundings will work out, not only like systems of opinion, but like systems of society. Like, we may say; but not identical. A man may begin life full of superstition, which he lays aside in the vigor of manhood, only to resume it when he becomes old; but the superstition of juvenility and of senility may be, and are apt to be, very different in character. One's antecedents at any period of life are part of the circumstances which influence faith and opinion, and they tell in results when after long years one returns, with an old man's fondness, to early impressions.

It is trite also, to say that a human propensity, like the conjugal, say, will shape its manifestations under different circumstances and among different peoples, in a variety of apparently incompatible and contradictory systems,—but systems they will be, however diverse. These two principles, that diverse systems spring from the same propensity, and that similar systems spring up among diverse peoples under similar circumstances, act together to produce the phenomena of social and political institutions.

The mystery of the feudal system disappears, perhaps, when we consider the circumstances under which society was molded into this form, and the fact that the system itself was essentially the reproduction on a grand scale of the patriarchal system. In the patriarchal family the ties were primarily those of nature, supplemented by adoption; the obligations grew out of the relation of parent and child, and the alliance thus formed was offensive and defensive. If danger had not threatened on every side, the

obligations of the inferior to the superior would have set far more loosely than they did, and the sympathy of the mutual relation would have been far weaker than it was. Every society is a congeries of balanced opposites, without the balance being at all complete; and the higher the form of society, the greater is the complication of this congeries. In primitive societies, clans, tribes, petty states may be regarded as opposed unities in constantly active resistance against one another. The patriarchal is a primitive form of society, and only exists under primitive conditions, when men are comparatively wild and given far more to violence and disorder than to gentleness and order. Such were the times and the people under the rise of the feudal system. After the empire of Charlemagne fell to pieces, violence and anarchy reigned everywhere. Men were rude and aggressive; the feeble were, without exception, the prey of the strong, and the red hand of disorder and violence, directed by personal self-seeking, struck through society wherever it was weakest. There was no strong arm to bring order out of this chaos. There was no common bond between men, and they appeared not only to have lost the habit and power, but even the remembrance of government. Upon the reversion of society to a state of barbarism, the reversion to social forms appropriate to that state comes along naturally enough in the order of historical sequences. Men had to do something to protect themselves against the disorderly violence of one another. The weak allied themselves with the more powerful who were nearest at hand to make common cause against aggression. They formed a feudal family, in which the weaker members became theoretically and practically obedient children to their superiors. If any were owners of land they made it over to the lord and received it back by feudal tenure pledging therefor personal fealty and service in arms. The combination was not formed on the basis of blood relationship, by nature or fiction, for that could not be, but on the pledge of mutual good offices. "The lord and his vassals, during the ninth and tenth centuries, may be considered as a patriarchal household, recruited, not as in primitive times

by adoption, but by infeudation.”—(Maine. *Ancient Law*, 229.) The antecedents of the patriarchal, and of the feudal families were unlike as to the possibilities of possession and kinship, and to this cause is due mainly the difference between them. Nevertheless was feudalism a modified form of patriarchalism; and it came into existence from the very obviousness of its practical utility. It took form under the pressure of great need, and the direction of movement was determined by the composition of forces. The system may be regarded as the juvenility of the new civilization, as patriarchalism was the juvenility of the old.

But while the feudal system grew out of a violent and disorderly state of society, it served by its very nature to perpetuate violence and disorder, though in a modified form. Every thing about it betokened the universal prevalence of petty warfare. The towns were walled and every house was a castle. The great barons made war on one another for revenge and plunder. The right of private war was a most precious right which no one could think of giving up. Lords sallied from their castles to rob merchants on the highway. Bishops even, forgetful of their peaceful profession, entered the lists of strife, and did not hesitate, robber fashion, to prey upon the weak.

SECTION 132.—During the feudal ages it became a question to whom the vassal owed allegiance in case of conflict between his lord and the king. It is probable that when society was most completely shattered to pieces, little was thought of obligation to any one beyond the inferior lord to whom fealty had been formally pledged. When the feudal system had passed into decline, and the king had acquired larger recognition, it was held that the vassal owed allegiance first of all to his sovereign. As history repeats itself, so we find this question of conflicting loyalty to be quite like that which distracted the politics of our own country before and during the late civil war. If it had not been decided by the war, we may be sure that, with the broader views which an advanced civilization fosters as well as demands, the high claims in behalf of loyalty to the state as against loyalty to the nation, would have died out like witchcraft or the feudal

relation, on account of its sheer unfitness longer to survive. But as a sequel to the extinction of this extreme form of the minor loyalty, a struggle has become necessary to maintain for local self-government its proper weight in the balancing of state and national powers. This struggle now going on is quite like that which followed the feudal system, when it became necessary in the interest of freedom, for the minor powers of the realm to resist the encroachments of the central authority.

SECTION 133.—What caused the decline of the feudal system? The development of industry and commerce. Thriving cities emerged into existence and fostered a spirit which was entirely at variance with the conditions of society under feudalism. The exchange of products requires peace, and not a universal system of brigandage. But cities came up only through much tribulation, being the arenas of many-sided conflict. With the development of wealth, new classes arose; and with the rise of classes began the war of classes. There would be a contest between the civil and ecclesiastical powers, and the bishop must be reduced before there could be independent secular government at all. Then the powerful families would compete with each other for the upper hand; and meanwhile the industrial classes growing into consciousness of power would enter the lists with the oligarchy for a share in governing.

There could not be order in society without political organization with a head; and this head was in those days the king. As he rose to power the fragments of society became more united in the general interest of all. The king had to overcome the separate supremacy of the cities, of the barons, of the great bishops, and to effect this, he often set up one against another; and in the midst of this contest between the king and his inferiors, the legislative power assumed a more distinctive form. And then when the wealth and the growing sense of liberty created a plebeian class, which was formidable in its demands for rights, the king would instinctively turn to the hereditary nobles as his most natural allies for sympathy and help in making resistance. But the alliances of this many-sided conflict were

supremely capricious; they were leagues of interest readily formed and readily broken, and the friends of one brief period were often the enemies of the next. Nevertheless, it all worked steadily to one end, the better organization and gradual improvement of society.

During the period of feudalism there were no ready facilities of inter-communication between places; bad roads favored the system by the isolation of petty sovereignties; but with the rise of cities, industries and commerce, there was an improvement in the facilities of travel and transportation which favored the effort of kings to extend their sovereignty over more distant territory. The invention of cannon and the use of hiring troops gave strength to the central power and assisted in establishing and maintaining order; and thus the feudal system came to an end. The central authority served very great uses in being strong; the despotism which only too often resulted was an abuse which under the circumstances was unavoidable. Thus the good and evil go in pairs, and it is only a short step from one to the other. Without a strong central authority, the good could not have been had in those stormy times; with such strong central authority, the absolutism of kings could not always be prevented. It was in these contests with absolutism that legislative bodies came to a consciousness of their power,—also, to become at times the instruments of grave abuses. Freeman, the historian, has well said that almost every political question is a balance of evils, and “that no kind of government worthy to be called government is universally good or bad in itself.”—(*Essays*, Vol. I., 399, 405).

CHAPTER XIX.

THE CHRISTIAN SYSTEM UNDER CONTACT WITH OTHER SYSTEMS.

SECTION 134.—*With Judaism:* What may be called the system or framework of Christianity was Judaism with an elimination and an addition. It left off the law and its complication of primitive observances, retaining only a part of current ordinances, and added the worship of Jesus with modification of the moral system. The doctrines of immortality, of the resurrection, of vicarious sacrifice, of baptism, of the mission of angels, of the devil, were already current among the Jews. Much of this had been adopted from the Persians. The Jewish system was a composite derived from the whole of Jewish experiences; and Christianity was destined by a clear law of historical causation to become more composite still. The cross had long been a religious symbol, and by the coincidence of the manner of Jesus' death, the Christians had only to apply the symbol of earthly life to the scheme of eternal life. Plato and his successors had prepared the *logos* or Word, which Jewish and gentile disciples applied to Jesus, and made a characteristic property of the Christian system. Most of the Jewish Christians wished to retain the exclusiveness of Christianity in consonance with their habit of exclusiveness as Jews. Paul and Barnabas, however, infused into the new system a more catholic spirit, and accepted converts, without circumcision. This was the point on which the Jewish and gentile Christians opposed each other; and the contest was not confined to Jerusalem and Palestine, but spread through the cities of Syria and Asia Minor where the Jews had synagogues and maintained their peculiar worship. At length the narrow spirit of Judaism was overcome and exor-

cised by the expanding force of the new movement which crystallized into a new system. But notwithstanding the inroads of Christian propagandism, Judaism maintained its integrity as a distinct religion; and between it and Christianity was maintained a feeling of animosity which at times broke out with painful bitterness and cruelty, and which to this day has not been wholly quieted.

SECTION 135.—*With Paganism:* In most great conflicts between Christianity and other religions, the former has taken on modifications even from the opposing religions which it had overcome and apparently exterminated. As unlike as Christianity and paganism were, as completely as the former appeared to have subjected the latter, yet was Christianity radically paganized for centuries. The movement gathered strength immediately after the legal substitution by Constantine of the Christian for the pagan system, and having almost completely adulterated the Church, lasted till the renewal of primitive spiritualism by the Protestant reformation. The religion of Jesus encountered paganism in two separate contests: first, in that with the religion of the Roman empire, and secondly, in that with the religions of the barbarians who overran the empire. The ignorant worshipers of Odin embraced Christianity with a facility which appears to be marvelous; but unfortunately, Christianity did not lift them up into its embrace so much as they drew it down into theirs.

We speak of a religion as a sort of entity; but it is never fixed and uniform in character; and if it may be figuratively regarded as an "entity," it is protean to the last degree. What we know in history as religions are certain modes of belief with ritualistic forms; and any individual (especially among the more cultured peoples) is liable to give a tinge of personal coloring to his religion. This tendency to a distinctive bias is still more true of races than of individuals. The barbarians who accepted Christianity could not throw off their old habits; at best they could only modify them. They were very far from confining their religious regard to the one true God which Christianity had

adopted from the Semitic mind. The Father, the Son, the Virgin, saints, martyrs, and relics became objects of worship, and the Christian system was transformed into unmistakable polytheism. Not only this, but the virtues of the original gods were transferred to their images, and image-worship was for a long time general in the Christian church by authority. We can hardly realize that this polytheistic and image-worshipping system of religion was the same that grew up in Palestine and western Asia under the polytheistic repugnance and image-hating of the Semitic temper. The sacred names were retained, the rites and observances were intended to be Christian, but the distinctive spirit of Christianity, that which gave it its spiritual supremacy, was completely set aside. The vision of spiritual things was no doubt so dim, and the sense of future retribution so weak with the herd of worshipers that their religion was not master of the passions but their slave.

SECTION 136.—*With the Religions of the East:* Christianity in its conflict with the Oriental religions suffered in a different way: It was not by subversion as in its contact with paganism; but by the rivalry of eclectic religions, which, though they created defection and discord, were yet unable to outbid the Christian system for the favor of the many. In the one case, it was insidious adulteration till practical polytheism superseded professed monotheism; in the other, it was the obduracy of older religious doctrines which built themselves up as a wall against the further advance of Christian propagandism, and which enabled their devotees to make excursions into Christian territory and sallies into the Christian ranks, the effects of which have never since been entirely obliterated. Originally, the Christian system could not have been what it was but for the blending of Greek and Oriental influences in western Asia; and it afterwards became subject to additional modifications from the same quarter. The Oriental systems were more speculative, and resulted from a more elaborate activity of the intellectual faculties. They were more from the head and less from the heart. They belonged to older civilizations, and were, perhaps,

a more matured product of the human mind. This view is confirmed by the fact that the Christian civilizations are just now manifesting a decided tendency toward Eastern speculations, with such modifications as the more systematic scheme and wider range of modern knowledge make necessary.

The doctrine of an original and insuperable antagonism in the constitution of things was a leading one in the Oriental systems. Gnosticism first attempted to unite with Christian conceptions the Brahminical doctrine of an essential antagonism between mind and matter, the one pure and sinless, the other corrupt and malignant. In order to retain the divinity of Jesus this doctrine necessitated the etherealization of his body, and regarded him as an eon or emanation from the pure, primal spirit. From the execration of matter as the source of evil, arose the mortification of the flesh as the means of good. Monachism prevailed in the East, and by contagion as well as through the direct teachings of the Gnostics and Manicheans concerning the malignity of matter, it became an established feature of the Christian system. In bidding for blind religious veneration, especially in the East and in Europe in former times, asceticism counts high; and puritanism is the form which Protestants offer, as monasticism is the form which the Catholics retain. The essential animus of asceticism, whatever its form, as well as the receptivity of personal temperament which assures to this repressive idiosyncrasy its value, is largely a heritage from the East. It is believed to have arisen in Egypt, whence it spread into Syria and Palestine, and was introduced into the West by Athanasius (Trench).

Manicheanism was a very complicated system, and drew freely from Oriental sources, and from the more recently elaborated system of Gnosticism. It recognized the eternal hostility of mind and matter with all the inferences and complications which the doctrine involves. It was its more especial function to unite with the Christian conceptions the particular feature of antagonism which is found in the Magian system of Persia—the contest of good and evil, of light and darkness, for the

supremacy of the world. Manicheanism had elements of success in it, which Gnosticism had not, as the event of its spread throughout Christendom shows. Its followers cannot be regarded as at any time very numerous, but they exercised a disturbing influence at the centres of Christendom, and were thought to be worthy of persecution under the edicts of emperors. Their influence on the Christian system has never entirely died out.

The Marcionites, an ancient sect scattered throughout a number of countries in Africa, Asia, and Europe, held similar views of the antagonism between a principle of good and a principle of evil. Once a numerous sect with a greater leaven of rationality in its creed than was common, it became extinct in the sixth century. The Paulicians took up a part of the Manichean system, its dualism, its rejection of idols, and its etherealization of Jesus; and as exiles, they carried their doctrines through Europe. Long afterward, the Albigenses who had become numerous in central Europe during the twelfth and thirteenth centuries, were persecuted for holding a modification of these tenets. The doctrines with such changes as time must bring revived in the Reformation, culminated in the theology of Calvin and the poetry of Milton, and entered authoritatively into the theology of Protestantism. The doctrine of election, by separating mankind into the children of light who are to be eternally blest, and the children of darkness who are to be eternally damned, enforced an exaggeration of cruelty not to be found in any of the kindred notions of the Magian and Manichean systems. In every modern Christian "revival" or Christian's experience, the contest goes grimly on between the powers of good and evil, Christ at the head of the angelic hierarchy, and Satan at the head of the other,—it is Magianism, Manicheanism christianized and modernized.

These few points in religious history have been here used to suggest how religious conflict may readily lead to the assimilation of new doctrines and the blending of hostile creeds. There is a contagion of faith, and one creed is liable to imbibe from another even in active conflict, as nations at war learn from each other.

SECTION 137.—*With Mohammedanism:* Mohammed united Arabia under one government, knocked the idols to pieces, and changed the religion of his country,—all in less than twenty years. No other man ever did so much in so short a time. The wonder is not that his followers regard him as an apostle or prophet, but that they do not worship him as a god. The prestige which Mohammedanism acquired under its founder, was not lost under his successors. Within a hundred years from the birth of Mohammedanism, it had taken possession of Persia, Syria, Egypt, Northern Africa, Spain. Notwithstanding its policy of toleration in the countries it conquered, it exterminated Magianism in Persia, and Christianity in Spain and Africa.

The founders of Christianity and Mohammedanism were for the most part illiterate. Their systems were simple, evincing no such elaboration as the Oriental philosophico-religions. They appealed to the emotions rather than to the intellect. There is much that is common in those two great religious systems, with perhaps this difference that the Christian was more severe in its morality, while the Mohammedan more fully assured the integrity of monotheism. They both sprung from like sources; but while Mohammed wrought out his unaided, the early followers of Christ assisted greatly in molding Christianity into a system. The prophet had been to Jerusalem in his youth, and learned there of the one God and of the divine mission of Jesus. We are to believe that the ideas made a deep impression, and constituted the germ of what was soon to be a mighty religion. They wrought upon Mohammed's mind (said to be epileptic) till he became possessed with the illusion that, like Moses and Jesus, he too was a prophet. "There is one God and Mohammed is his apostle," became the cardinal doctrines of the new religion, which inculcated prayer, fasting, and alms, interdicted wine, gambling, and infanticide, and taught the doctrines of the resurrection, of hell, and of paradise.

Perhaps the very likeness of the Christian and Mohammedan systems caused them so to repel that there could be no mutual blending of sympathies and doctrines. It is the little differences

in creeds, those microscopic distinctions which are visible only to the sharp eye of faith, that excite to its highest the hostility of fanatical sectaries. If the system had been identical in all other respects, the fact that it was Mohammed and not Jesus, or Jesus and not Mohammed, would have been sufficient for the uttermost repugnance between them. The greater unlikenesses may compromise with each other, and as complemental forces, sometimes blend. Mohammedanism seems to have been modified by Zoroastrianism into a Persian form, as it has also been modified by Hindooism into a Hindoo form. The differences between the Mohammedan sects appear to be founded on issues less grave than those which have given rise to the Christian sects, having reference to succession and observances rather than to abstract dogmas. The comparatively small divergences in this Arabian system may have been due in part to the homogeneous character of the Arabian mind, and thus more readily molded into permanent religious form by the confidence inspired by its brilliant successes in the cause of Islam. The busy subtilty which had distracted Christianity with futile controversy was well nigh exhausted before the advent of Mohammedanism. The Arabs when aroused into intellectual action—if indeed they were Arabs whose work goes by the name of Arabian Science—took rather to secular subjects than to the subtilties of theology; and their religion in its relations to Christianity has remained quite unchanged. Even when the conflict of Christian and Mohammedan powers was based especially on religious grounds, as in the Crusades, they appeared to bound from each other with little or no mutual religious influence. They affected each other, it is true—at any rate, the Christians learned from their enemies; but this was educational, intellectual, and not religious.

CHAPTER XX.

PAPAL SUPREMACY.

SECTION 138.—The early Christians had no thought of temporal power. They were obedient to the civil authorities, and desired not to be molested in the exercise of their religion. But in the course of time all this changed. Human nature is not materially affected by the cast of its religion; and while the civil and military power of Rome was in pagan hands, its overwhelming magnitude very naturally kept all thought of political power out of the minds of Christian subjects. But when they had become more numerous and there was sufficient inducement for a politic emperor to profess Christianity, the face of the religious world was suddenly changed. Demagogues go wherever they are invited by the chances of power. The high places in the Church were often filled by ambitious men. It was gratifying to be able to control civil functionaries by the terrors of the Church. Such terrors afforded the opportunities of power, and such opportunities seldom go unimproved. Bishops disciplined and humbled the greatest sovereigns of the earth, and came at length even to create and depose kings at will. The Church may at one time have insisted on the separation of the spiritual and temporal authorities to save itself from the secular power of rude barbarians; but later it struggled constantly to incorporate the temporal into the spiritual by subordinating it.

This great ecclesiastical power developed force in various quarters, and like all such developments, it assumed the tendency to concentrate. The movement was a long time going on before it acquired organic unity in the hands of a single bishop. The struggle was moreover a complicated one. While

the bishop of Rome was struggling for the ascendancy, the kings were struggling to subordinate the nobles. The sovereigns and their people, the orders of the Church, and all classes of society being equally subject to the motives of superstition, the leading power of the Church played them off against one another, not only to dwarf other bishops and thus acquire ecclesiastical supremacy, but to humble the temporal princes, and acquire dominion over kings and emperors. Monasteries and whole orders of monks were made independent of the bishops, and mendicant orders were created,—the persistent work of the pope to reduce the power of others and exalt his own. To the same end history was falsified, and authority claimed for precedents which never had an existence. The growth of the power at Rome to tax the clergy of all countries was an encroachment on both the civil and ecclesiastical powers. The pope contested with emperors for the nomination, election, confirmation, and investiture of ecclesiastical dignitaries. Meantime the election of the pope became less popular, and was concentrated in the hands of the college of cardinals. The papal contended with the civil power for jurisdiction in the administration of justice, and the canonical and civil laws came in conflict. At one time his confirmation by the emperor of Germany was necessary to the pope; but so completely were the tables turned that confirmation by the pope became necessary to the emperor. In an actual trial of physical strength in a long war between popes and emperors the latter were overthrown. Kings were at the mercy of Rome, and they were known to surrender their kingdoms to the pope and receive them back as fiefs for the protection which this great ecclesiastical magnate was able to give. Papal power without as well as within the Church had risen to its zenith. It had made immense progress under Gregory VII. (1073–1086), who affected to handle sovereigns like puppets. Papal legates sent abroad filled with the spirit of their master assumed powers so despotic as to put sovereigns on their self-defense. As God's vicegerent on earth, the pope was not only ecclesiastically but civilly supreme, and he very wisely held that the pontifical

charge which had men's souls in keeping was far greater than the temporal which had only to do with their bodies. It was the battle between the spiritual and temporal swords that shaped most of the history of the Middle Ages. Of the two swords which the pope held the sacerdotal was far greater than the secular. This view had the authority of canon law. Interdicts and excommunications were held in mortal dread, and with good reason, as they were sometimes executed with terrible consequences. Every interest is self-seeking to the extent of its opportunity; and generally ignorance and superstition gave the popes unbounded opportunity which they did not fail to improve. The abject and brutal state of mind then prevailing is well shown by the fact that men sometimes bartered away their personal liberty for the good offices of the Church; and also by the fact that men who spent their lives plundering, plundering even the church, made sure before death to purchase the good will of the Church with the proceeds of their plunder.

SECTION 139.—Power manifests itself in waves, rising to its maximum and then descending. Papal power had reached its highest under Innocent III. (1198–1226), and when Boniface VIII. (1294–1308), declared every human being in body and soul, whether emperor, king, freeman, or slave, subject to the will of the pope, he but formulized what his predecessors had aimed to accomplish, and what to a certain extent they had accomplished. But other powers were rising, whose animus was directly at variance with ecclesiastical assumption. There was an awakening of the thinking mind through increasing knowledge of Greek and Roman culture. This originated a new element in society, a class of some intelligence with somewhat modified ideas which were naturally at war with the absolute pretensions of Rome. The feeling thus cherished diffused itself among the higher classes. But such changes took place tardily, one frame of mind having to displace another very largely by the slow action of heredity. Kings availed themselves of it readily enough, however, through self-interest, and to the infinite disgust of the popes taxed the clergy in their respective countries.

Practical men ventured to assert that the imperial dignity was dependent directly on God, and not on the pope (1338). Priests and laymen began to question whether there was not something other than authority necessary to warrant the righteousness of what the Church did. A part of the Franciscan order turned against the pope as anti-Christ. The Council of Constance (1414-1418) was refractory, showing unmistakable signs of democratic tendency. The Council of Basle (1433) took away papal privileges, and attempted the correction of papal abuses. Councils could no longer be trusted as tools, and they were henceforth discontinued. The papal power declined precisely as it rose—through struggle and combat.

CHAPTER XXI.

THE GREAT MODERN CONFLICT.

SECTION 140.—Attention has been called to the fact (section 102) that since the beginning of existence there have been two antagonistic forces in action, one of which would keep things as they are, while the other would change them. This is true of nature and true of man. Human beings could not always remain hunters and dwellers in caves. Every improvement in the implements of hunting, fishing, and war would necessitate a change of methods, would be an innovation, would be progression. The domestication of animals and the introduction of pastoral life would give a greater command of subsistence and render life less precarious. The adoption of agriculture would be a vast stride in the same direction. The addition of manufactures and the commerce growing out of varied production and the incentive to exchange would complicate and promote still further the interests of society. All this appears on its face

to be very peaceful, and yet it was attended at every step with more or less conflict. The habit of doing things always in a particular way would not readily yield to change, and the innovation would only succeed by the advantages it gave after a long and persistent struggle. The tenacity of habit, especially among simple minded people, is a matter of common observation and remark. The native laborers on a public work in East India aptly illustrated this by their insuperable repugnance to trundling little wheelbarrows; they were bound to carry them on their heads or in their arms. Innovation under such circumstances might not meet with bitter, though it would meet with dogged opposition. But when it threatens the interests of a class, the opposition it arouses is very sure to be full of bitterness. Since in primitive times there were no classes, the little progress that was made had little more to do than to overcome the resistance of habit. The conflict, if such it may be called, between conservatism and progress was very physical-like in its character. With the rise of classes, however, whose interests would be affected by innovation, passion would enter into the contest and render it bitter in proportion to the supposed value of the interests at stake. The invention of a new weapon might excite envy, but not enmity among a primitive people; and the construction of a hut, not threatening the cave-dwellers with a loss, would hardly alarm them. Very different is it further on, when the invention of a labor-saving implement is interpreted as threatening evil to laboring men who instinctively seek in its destruction the necessary and only means of self-protection. In like manner, the discovery of a truth pregnant with revolution sends trepidation into the ranks which are threatened, and they resist to the death. It is only in the higher forms of society with numerous and well-defined functions, where indeed change is most likely to occur, that this sensitiveness to change is most distinctly marked, and most likely to play a leading part in shaping the events of history.

SECTION 141.—The revival of civilizing tendencies which brought the dark ages to a close was dual in its character—

intellectual and social. The intellectual was due mainly to classic and Arabian influences. But it is not possible to separate the intellectual from the social, and both were promoted through the development of industry and commerce with greater facilities for intercommunication, and the rise of cities in connection therewith. No doubt the crusades gave an early impetus to both branches of the movement, being an ebullition of fanaticism, which to some extent, and mainly through its disappointments, worked off the theological state of mind, and left it partially secularized. The civilizing tendencies of the following centuries had precisely opposite effects on the Church and on the State. Priestly power had reached its zenith under the ignorance and barbarism of the dark ages, and the intellectual and social progress which supervened slowly unmasked the enormity of papal assumption. No sooner had the intelligence thus generated, time to act in results than the high hand of priestcraft met with opposition, lost a part of its prestige, and was no longer absolute in power. But the same causes which weakened the pope strengthened the kings. Under the beginnings of social and intellectual progress came to be felt the growing need of greater order in society, and as this was only to be had in such times by the secular arm of sufficient reach and strength, political organization with the king at its head gradually encroached on the isolated sovereignties of the feudal system, and at length subordinated them. But the momentum thus acquired by this tendency could not be arrested till it ultimated in civil absolutism; and the despotism was now temporal in its leading character as it had before been ecclesiastical. In the sixteenth century this movement culminated and monarchs on the continent, and even in England, were absolute.

Despotism had now culminated in two distinct forms,—in an earlier age the ecclesiastical, in a later age the civil. Neither could stand still; there must be reaction and from those times till now the contest has been going on between liberty and despotism, and it is not yet ended. This is the prevailing form which, in modern times, the great world-contest between change

and resistance to change has assumed. It has been for centuries, and still is a conflict between established forms and innovating thought, between exclusiveness on one hand and a catholic sympathy on the other, between selfish interests and interests which are more magnanimous, between bigotry and toleration, between misty and narrow ideas and ideas which are better defined and more enlarged, between ignorance and intelligence.

For generations there had been growing dissatisfaction with the arrogance and corruption of Rome, but all attempts at practical reform were successfully baffled by the sinister artifices of professedly holy men. Councils and sovereigns had attempted reform without apparent result. The very council (that of Constance) which was laboring to inaugurate reform in one way summoned to martyrdom John Huss and Jerome of Prague, who were attempting reform in a different way; and the empire really fermenting with reform, yet dominated by bigotry, stamped out the Hussites who had sprung up from the ashes of the martyr. The pope had his many contests with the temporal sovereigns, and his secular authority was hedged in little by little; but in the field of religion and morals he had no successful antagonist till Luther rose. The Reformation was the first great rising against a system which had stamped out all religious freedom, and rigidly enforced the duty of unquestioning obedience. Luther and his coadjutors refused to obey; they had ideas of their own not only condemnatory of the practices in vogue, but enjoining modified views of religious duty. Luther exercised the prerogatives of a man, the right of individual judgment, and the liberty to adapt his conduct thereto; but it was one thing to exercise such freedom, and quite another to recognize it as the sacred right of all. This he did not do. While using his own reason, he stigmatized reason in general as a beastly thing to be kept down at all hazards. His contemptuous tirades against reason were very different from the plea for reason and free inquiry made by Erigena, Roscelin, and Abelard in much darker times than Luther's. Manifestly, Luther only exchanged one authority for another,—that of the pope for a book, and he

assumed that the doctrines of the book were just as easily ascertained as those of the pope. Yet in making up a body of doctrines from the book concerning the saving power of grace, his own reason, covertly it may be, asserted its right to a hearing; and it did so doubtless, even when in the discussion of transubstantiation which sprung up among the Reformers, Luther held tenaciously to the literal rendering of the words, "*Hoc meum corpus est.*" Evidently, thought was less definite then than now, and it was easier to shape the specters of the imagination into reality, thus to eat the very flesh, and drink the very blood of Christ, as well as to hurl an inkstand at the devil for intruding on a Christian's quiet in the solitude of the Wartburg. Faith was in those times a prevailing mental potency which in these last days has been greatly demoralized by the rigid methods of science.

What these reformers were after was precisely what the pope thought he had; and in this respect they were all alike,—they imagined they must have theological finalities. People who have finalities of dogma are not apt to be tolerant. A holy man who preaches his finalities at us, is apt to be displeased if we do not accept them, and usually if he had the power, he would make acceptance compulsory. *His* truth is not a thing to be trifled with; the well-being of the world here and hereafter depends on it, and his intolerant zeal appears to him to be the most reasonable and defensible thing in the world. It was so with the reformers. They took the liberty of differing from the pope, but they didn't intend that anybody should differ from them, if they could help it. The reason of that was, they were right and the pope was wrong. It was just as bad to go beyond them as to lag behind. This was strikingly exemplified when Calvin burned Servetus—so often referred to. Calvin was the pope of Geneva, and Servetus' offence grew out of the fact that he had more brains than Calvin under better discipline, and dared to use them. In the light of later times, we should not think Servetus' views at all alarming, but they embraced doctrines which Calvin could not comprehend, and which were not so

arbitrary and cruel as his, consequently they were adjudged to be very bad, and Calvin must needs avouch his zeal for a holy cause by committing one of the worst murders recorded in history. Every form of bigotry and intolerance had place among those who protested against like things in Rome. The Protestants wanted freedom till they got power; and then whatever the grade or form of Protestantism, it was equally ready to withhold from others the tolerance it had sought for itself. When the Episcopalians were in power, the Puritans were not allowed freedom of worship; and when the Puritans came into power, neither Episcopalians nor Catholics were allowed such freedom. Laud had persecuted the Puritans, and in turn the Puritans made a martyr of him. And again when the established church came into power, its people grudged to Catholics and Dissenters the religious liberty which was secured to them by the Declaration of Indulgence. And in our own land of freedom *par excellence*, the people who had fled from the persecution of Laud for their own religious liberty, exercised it by grim intolerance even to the hanging of Quakers as well as of witches. The Puritans of Massachusetts were worse persecutors than the Catholics of Maryland.

Still those old-time reformers inaugurated a movement which has resulted in religious freedom, an achievement of which they had no conception. "They builded wiser than they knew." Once the authority of the Church was broken, and theologians began to think for themselves, they fostered the habit of a certain form of mental independence, and maintained it, without formulating it as a principle. The shades of doctrine became so numerous, and the Christian denominations so disunited and even antagonistic that there could be no hearty fraternization to any definite end. In conflict no one was strong enough to subject all the rest. Contention enough there was, and intolerance enough, but every one being in a minority it could not be the executor of religious despotism, and was compelled to accord to others the freedom it claimed for itself. Hence, freedom came at length to be recognized as a principle worthy to govern con-

duct, and sectaries boasted of it as if they had meant it from the first. It was the product, not of pious intention, but of sectarian conflict.

Change often comes without anybody's intending it, or consciously working for it. Most changes are ready for consummation without being even foreseen. Staid and respectable things are jogged from their old places by forces which none planned for such purpose. The meeting of Oriental, Greek, and Arabian thought in Europe and the improvement of industry and commerce bred the Renaissance. When unlike forces meet they may develop new energies, and what the resultant will be none can foretell. All things in those days were cherished by their abettors as finalities. And while Protestantism supposed itself to be a great original which had power to fix things, it was in reality only a provisional activity—the starting point of a great movement which should gather strength with the ages. While it would gladly have taken control, and anchored its dogma of salvation by grace as a finality, it had no more power to this end than the wave has to stop the flow of waters. In setting the unconscious example of free thinking, it was setting in motion a power which would ultimately call in question all its cherished finalities of dogma. The Reformation was only a grand wave on the great stream which never ceases to flow. In its character as a system of dogmatic religion it has come down to us, and under the influence of modern forces it appears to be developing a two-fold tendency—one toward Romanism, the other toward science. It almost seems as if the religious forces of civilized peoples were gradually collecting into two hostile camps, the theological and scientific, the traditional and rational, with well-defined but antagonistic principles from the foundation up, and thus getting ready for a long war, still to come.

SECTION 142.—The decentralization of government in England was never so marked as on the continent. The territory was smaller, the great nobility were never so strong, and the central power made itself felt everywhere more readily. Hence, the contest of the people with the king for their rights began earlier,

and makes up a larger portion of history in England than on the continent. The securing of *Magna Charta* under John, the "Confirmation of the Charters" under Edward III., the rise of the parliamentary power, were the results of victories won for the people, and largely by the people. The questionable title of the English kings during most of the fifteenth century may have favored the progress of constitutional government; but after the desolation of property and people by the war of the Roses, the tide of affairs turned, the movement of the centralization of power was too strong for the resistance made by the Commons, and Henry VIII. and Queen Elizabeth were well nigh absolute sovereigns.

There is most danger of absolutism after anarchy owing to the felt need of security for life and property; and after despotism there is the most danger of license owing to reaction under the felt need of freedom. After the strong Tudors came the weaker Stuarts, when the popular element in the government acquired its former vigor, and proved itself able under Charles I. to empty the throne of a contumacious king. The disorderly condition of society again reacted into despotism; and thenceforth the result of the struggle between liberty and tyranny has been a more uniform enlargement of the sphere of freedom, secured by constitutional guarantees, and exercised under constitutional forms according to the measure of fitness among the people. This entire movement has been the consequence of the rise of classes in society with intelligence growing into the consciousness of power, necessitating the contest between new ideas springing out of the awakened intellect, and the old ideas which became crystallized into institutions in times past. The difference between the doctrine of the divine right of kings and the doctrine of the responsibility of kings to the people, involves a complete intellectual revolution.

Centralization in France did not take place so early as in England. The territory was larger, the nobles stronger, and baronial isolation and the feudal polity more complete, so that the king extended his jurisdiction with more difficulty, and it

was not till Louis XIV. that political absolutism reached its maximum in France. Growing intelligence favored this tendency, but a strong government may be administered with an intolerable abuse of power, and the still growing intelligence would revolt against such abuse to the extent of a reaction in the political forces. As after the reign of Elizabeth, so after the reign of Louis XIV., the popular element gained rapidly in power; and as in England, so in France, religious liberalism and political liberalism made common cause in the endeavor to break up all forms of exclusive privilege. And again, as in England, a modified form of despotism supervened upon the disorders of revolution, and Napoleon did for France what Cromwell had done for England. But progress usually takes place by action and reaction, and amidst all these apparently contradictory changes, there was a fair average of winnings for the cause of social, political, and religious liberalism. And this movement is still in progress, in France, England, Germany, Italy, Russia, almost everywhere throughout the civilized world. It is a double movement involving a seeming paradox; for while individual liberty is enlarged and better secured, the government is more firmly knit together by the physical and political appliances of centralization. But we are not to encourage the too common delusion of believing that what is going on before our eyes and to which we have become accustomed, is to go on forever. Covert forces may now be at work which will resist the tendency to greater individual freedom, and greatly modify the administrative direction of the central power.

SECTION 143.—For the last three centuries the conflict of distinct ideas with old notions has been greater than ever before known in history. Previous to the birth of modern science, certain notions concerning the order and government of nature were well nigh universal, and held as not only true, but as sacredly true. These were (1), that the earth is the principal thing in the universe, the sun, moon, and stars being merely appendages thereto; (2), that the earth is flat with heaven as well as the heavens located above and hell beneath; (3), that

the earth is stationary while the sun, moon, and stars go around it; (4), that the earth and the heavens and all things therein were created out of nothing about six thousand years ago; (5), that death came into the world by the fall of the first man; (6), that God governs the world by personal supervision and keeps a record of the doings of every accountable being in it; (7), that mind is independent of corporeal structure; (8), that priests were delegated the power to adjust moral and religious relations between man and man, and between God and man.

These doctrines once held with unquestioning faith as divinely established, have either been overthrown or are now under discussion at manifest disadvantage. The contest concerning the form and motion of the earth and its relation to the other members of the solar system, with the utter overthrow of the conservative position is frequently referred to and familiar to most. It is very thoroughly popularized in Protestant literature, perhaps, because it is a case which brings out so clearly the fallibility of the ecclesiastical authorities of the times. But although Copernicus and Galileo published their works after the rise of Protestantism, it does not appear that the Protestant leaders rallied to the support of the new philosophy. Doubtless all classes rejected it as indignantly as the Holy Inquisition—all save the very few persons with brains who dared honestly to use them. It required generations after this to familiarize the minds of the great body of the people with the idea that the earth is a globe which turns on its axis and revolves round the sun. And even now, after the earth has been so repeatedly circumnavigated, and all the proofs of its rotundity and motion have been made absolutely unanswerable, and astronomical predictions unerringly based upon them, yet there are still persons of the theological cast of mind who are able to prove from Scripture and reason to their own satisfaction that the earth is flat and stands still. A friend of the old doctrine quite recently undertook to prove to A. R. Wallace and others that the surface of a body of water is perfectly flat; and the Rev. Jasper, a colored clergyman of Richmond, Virginia, has been making it

clear to gaping auditors that "the sun do move." These are of course extreme cases and the result of great ignorance or of monomania; but they show the tenacity with which a false notion, if once associated with superstition, still clings, and illustrates the resistance which truth has often to overcome. But, once the teachings of Copernicus and Galileo were held to be heretical, atheistical, and blasphemous by the great authorities of the world, now they are accepted as unequivocally true by all those authorities.

The contest concerning the age of the earth and the manner of its formation has been scarcely less bitter than that concerning the form and motion of the earth. Theologians supposed they had the highest possible authority for the doctrines that the earth and all that it contains were created by Almighty fiat in six days about six thousand years ago, and that death came into the world by the fall of Adam. In the contest over these points, Protestants have certainly been as active and acrid as Catholics, in opposing the fundamental principles of geological science. And so far as opposition is still made, the weight of it comes from the Protestant clergy. Believing that doctrines essential to the Christian religion are at stake, they have more incentive to bestir themselves than have the Catholic priesthood, for the simple reason of the greater intelligence among the Protestant laity, and the consequent greater danger of their falling into heresy.

Wild explanations have been given of the new and troublesome facts. Men assumed to teach "Mosaic Geology," who knew nothing of scientific geology, and by consequence blundered greatly. It was insisted that the flood carried fossils up the mountains; and when found deep down in the rocks, it was contended that these simulations of living things were so created and placed there from the first. This, with much more like it, was to be sure very puerile; but it seemed to be sound to those who labored in the interest of dogmas supposed to be divine. Of course, these primitive notions about the creation and age of the world have been as completely overthrown in the logical

contest as were those other old notions concerning the flatness and fixity of the earth. Overthrown, indeed, but only for the unbiased and intelligent! Perhaps ninety per cent. of all the people of the civilized world still believe according to the Hebrew cosmogony, that the world was arbitrarily created out of nothing a few thousand years ago. This creation-scene is pictured on the mind by early education, and it never fades; while in most minds there is no room for another. Slowly, slowly, does the force of logical demonstration overcome the resistance of mental habits formed under dogmatic teaching.

So easy is it for the mind to entertain an absurdity to which it has always been accustomed that it will unhesitatingly reject an alternative because it is new, though unexceptionably rational. This is a phenomenon with which we are very familiar in our own times. Belief in creation by development is thought to be impious by many who believe in creation by arbitrary fiat. They are uncompromising in their demands for proof of the origin of species by derivation, while they discourse of origin by outright creation as if it were a fact of every-day experience. Agassiz persisted to the last in his opposition to development, but he had no difficulty in conceiving of the creation of mankind by whole nations. Agassiz was a scientist, but under the theological bias, or some other, he went to extremes in opposing development, as when he declared before a popular audience and was applauded for so doing, that the theory could not be true, because the ice age was universal, and had cut off all animated existence from the face of the earth. At the present moment no doubt, the opposition to the doctrine of evolution is mainly from the theological bias, even when it wears the mask of science; and some of it is just as weak and foolish as that which was made against the astronomers and geologists. An author who has recently discharged a ponderous volume at Darwin, Hæckel, Huxley, Tyndall, and others, upbraids the Christian doctors who have accepted of evolution, and frantically talks of "renewing the battle, even through fire and blood, if need be," for the tenets he champions. This desperately

emotional kind of advocacy leavens a great deal of bad logic, and no doubt meets with a great deal of sympathy from a class of Christian people ;—all the more honor, therefore, to churchmen who accept development now so thoroughly proved, and who, as candid men, go soberly about the work of reconciliation by a new interpretation of the canonical authorities.

Ever since science began to teach revolutionary truths the opposition made thereto has come principally from the church, the sects, and those in sympathy with them. Hence, this warfare has been called the conflict between religion and science. This is a most singular error of phraseology based on a confusion of ideas, to get into even the very best of the literature on this subject. It implies that there is no religion on the side of science and an ineradicable antagonism between science and religion. This involves a double error. The contest has been, not between religion and science, but between erroneous conceptions of the order of nature which had been incorporated into theological systems, on the one hand, and on the other, the discoveries of science which are incompatible with those erroneous conceptions of the order of nature. It is a contest between old ideas and new ones, the new for the most part being true, and the old, notwithstanding their religious flavor, untrue. Religious men may be engaged in conserving error, but surely they may be religious men who contend for the truth, though that truth be an innovation. Usually it is popular and creditable to champion a doctrine of long standing, but unpopular and odious to stand by a newly discovered truth which unsettles old notions. The one requires no personal sacrifice, the other does. On which side then is the religion. Surely it was something like religion that sustained Bruno and Servetus. Dare we affirm that they were less religious than the theological and gloomy bigots who destroyed them for opinion's sake? Priests are, above most other classes conservative, and appear always to be totally blind as to what they can successfully maintain, and what they will eventually be compelled to give up. The ecclesiastical authorities and their sympathizers have always

taken the old error under their own protection and fought for it to their own ultimate discomfiture. They called it defending religion; but as it turned out, they were defending an untruth which could not hold its ground, and that was not defending religion. It is because priests and secaries are habitually in opposition to the progress of scientific discovery, that students of this subject have been led into the error of supposing that there is conflict between religion and science. Let us be careful and not misapply names; let us be just, and think better of religion than that.

All intelligent people now believe that the earth is round, that it turns on its axis, and revolves round the sun, and is only a speck in the universe; that it is millions of years old, and was derived from matter previously in existence, and that death was in the world millions of years before the advent of man. And constantly a larger number of intelligent people are coming to believe that life was primarily generated by the operation of natural forces, and that species including the human have taken form by derivation; that the government of the universe including man in relation to nature, is unexceptionably by natural law and not by providential oversight, and that, consequently, any form of supernatural interference with the established order of things for any purpose whatever is not possible. Yet, it is still only the few comparatively who accept these doctrines and are governed in thought and feeling by them; but with truth on his side, every believer is a host, and proselytism goes steadily on.

SECTION 144.—It may be here noted that the warfare between ideas is now carried on very differently from what it was three centuries ago. Then it was a word and a blow by the conservative powers. There was no arguing with the innovator. He was notified that he was in error, and that if he did not recant he must suffer. He was indeed often seized without notice, and in some instances recanting was held to be without saving value, and death was the only satisfaction the holy cause could afford to accept. But now the sword has passed forever, it is to be hoped, from the hands of ecclesiastical bigots; and since they

can rarely touch the person of the offender, they often aim to weaken the force of his logic by tainting his reputation. The fagot is not in fashion but the poisoned innuendo is. When the physical arm cannot reach to harm, social ostracism may. To this day, there are clergymen who will slander "Tom Paine" before popular audiences, and never utter a word concerning the good and noble things that great man did. They would serve the cause of religion by perpetrating an act of injustice against a fellow-being. And it is current now that those who do not receive the petrified notions concerning the creation, the origin of life, of species and of man, the government of the universe by personal supervision, and the non-dependence of mind on organization, are forthwith branded as "materialists," "atheists." Divine men and men not so divine use this method of calling names. It appeals to a still popular prejudice, and is supposed to be a conclusive and final adjudication of the case. The odium theologicum and sociologicum has taken the place of the fagot, the rack, and the dungeon. But the torture of the one may be made, and sometimes is made, as exquisite as the other, while the method of applying it may be as unjust and almost as brutal.

The power to put ourselves in another's place favors justice and charity. Through the cultivation of our sensibilities, we come to shrink from imposing on others what we are not ready to bear ourselves. As to that, however, the persecutor is one who will himself play the martyr, if need be, without wincing; just as the shoulder-hitter loves to take as well as to give. Hence, the rough usage theological people gave one another in times past was not so bad for them as it seems to us; so that our gain is not so great as the change in favor of toleration would seem to indicate. We must not forget the greater sensibility of the modern man. And then when we reflect that persecution is still active, only in a changed form, we find less reason to congratulate ourselves. Still there is much to be thankful for in the palliation already secured, and something more to be hopeful for. If blind impulse ever yields to intelli-

gent sympathy among mankind, honest utterance will be more respected than it is to-day. And this may come about through the intellectual leavening of public opinion in consequence of which less will be feared for the stability of society and the general good, on account of any man's teaching. It may be perceived that there is a self-adjusting principle in society which neither men nor doctrines can overthrow. But this triumph of intellect might be attended with that coldness which is said to belong to intellect, and the heart may be less warm. This would be loss which attends the gain. But all this must be some way yet in the distant future. Most people still believe what it is pleasant to believe without inquiring too closely into the vouchers for its truth, and this will be the case for no telling how long to come.

SECTION 145.—In the study of this subject in current times, it is curious to observe how the same mind is at the same time influenced by contradictory conceptions. There are many who apply to their inquiries into nature the most rigid methods of science, but who scrupulously abstain from so applying them to religious subjects. It is as if the two fields of truth were subject to different laws of thought. With such, religious faith is one thing, and science quite a different thing,—not subject to the same principles of verification, and not brought into close companionship with each other. The one is organized into the emotions; the other is an affair of intellect. Two incompatible states of thought and feeling exist peacefully side by side in the same mind, and apparently unconscious of each other's presence. It is the peaceable juxtaposition of conflicting methods as well as of conflicting doctrines. But this does not prevent them from clashing when they respectively influence different minds; and it is now with the moderns as it was once with the Greeks (section 113), the incompatibility of the old and new has forced itself into consciousness, and it will not down. It is not certain that this conflict will ever end during the historical period, but it is certain that it will not prevent the pushing of the most rigid scientific

methods of inquiry into every subject of interest to the human race.

SECTION 146.—It may be proper to make note of the fact that there are two kinds of conservatism and two kinds of liberalism. Conservatism does well when it strives to retain that which is fitting for the times; it does not so well when it strives to retain what has already been outgrown. So likewise when liberalism proposes to establish what society is prepared for and what will be an improvement, it is in the right; but not when it strikes off into by-paths however apparently inviting, whither human nature, except under fanatical impulse, will not follow. It is the extreme of each that is equally wrong and equally culpable; wherein they are guarded and moderate they do not clash, because the one conserves what should be retained, and the other introduces what should be adopted. People who affect high breeding are apt to take on airs of respectability on the merits of their conservatism, while the secret of such merit consists in a constitutional aversion to mental and physical exertion, and in some instances, in attachment to ancient privileges which have lost their justice, if they ever had any, but which it is made the height of meritorious endeavor to guard from disturbance. However, when they are championing the outgrown, the effete, the proved error, they are usurping the credit of that wiser conservatism which saves only the fitting. Generous natures, and perhaps logical withal, espouse an innovation, and think it surely must be right because all progress involves innovation. There is an unwarranted confidence quite widely prevailing as the result of hasty generalization, that a doctrine must necessarily be "advanced," if it is only new and plausible. But it is not so easy a matter to determine the wiser way. Of course, all opposition to such wild radicalism is that form of conservatism which is useful in preventing the disorderly action of the social forces; just as opposition to the bigotry which stands in the way of progressive discovery and beneficial innovation, is that form of liberalism which is necessary to prevent stagnation in the energies of historical development. Mere conservatism has no

special merit of its own, and is not to be approved or condemned, till we ascertain what kind of conservatism it is by what it proposes to do; and precisely the same is true of what may go by the name of liberalism. The indiscriminately conservative may be very æsthetic, but are apt to be lacking in penetration, being possessed with a power of prejudice which there is nothing in the mental constitution to antagonize. A narrow man cannot put himself in another's place, and has no charity. He may profess Christianity, but lacking its greatest virtue, he is a bigot. The indiscriminately radical may be under greater intellectual momentum, but there is a want of mental balance, and such are liable to run into gush and fanaticism. The noblest type of mind is that which is both conservative and liberal, clinging to the old that is still good, and carefully sifting innovating doctrines and theories to the rejection only of what is visionary and untenable. The ultimate test of the wiser choice is to be found in the result; there is no constituted authority and no ultimate tribunal of logic to assure us. It is thus that society is preserved and made to progress between the conflicting action of these two forces. It is a grand example of resultant motion.

It may be well to discriminate between the two distinct fields in which conservatism and liberalism meet in conflict; the one field being that of thought or theory pure and simple, the other that of action involving the application of theory. Upon any fair balancing of ethical considerations, liberalism would be entitled to greater latitude in the theoretical sphere than in the practical, as disorder in the one would be less serious than anarchy in the other. And usually when complicated relations are to be affected, there must be agitation for a long time before the new idea has prepared the popular temper for its acceptance in practical results.

The general who declares his position tenable after his flanks have been turned, and the enemy is inside his works, very well illustrates the behavior of some of our conservatives; they do not know when they are beaten. The eager general who throws

forward either wing of his army to intercept the supposed retreat of the enemy, and then has to beat a hasty retreat in order to concentrate in front of that same enemy who intends battle, is almost sure to get whipped, and his ill-fortune very well illustrates the fate of inconsiderate and impetuous reformers.

PART FOURTH.

CHAPTER XXII.

ANTAGONISM AS A FACTOR OF EVOLUTION.

SECTION 147.—In attempting to state what evolution is and what its primordial principles are, I shall follow Herbert Spencer's presentation of the subject in *First Principles*. Bating Mr. Spencer's speculations concerning the unknowable which vitiate at times even his philosophy of the knowable, his statement of the law of evolution and its first principles must be regarded as one of the finest products of philosophical genius. After some of its merely speculative adjuncts shall have been eliminated, and some additional weight assigned to elements of the problem which are lightly passed over, this body of first principles will probably stand as the basis of scientific philosophy for all time to come.

We may preface this subject with the statement that evolution has its opposite, dissolution, and that these two antagonistic processes are constantly going on together, sometimes one, sometimes the other predominating. According to our authority, "Evolution under its simplest and most general aspect is the integration of matter and concomitant dissipation of motion;

while dissolution is the absorption of motion and concomitant disintegration of matter." And further: "When taken together, the two opposite processes thus formulated constitute the history of every sensible existence, under its simplest form."—(First Principles, second edition, 281–285.)

Our author uses the word motion, and never the word heat in this connection; and yet understanding heat to be a form of motion, and the principal form here meant, the use of the word in the formula, whether so accurate or not, might render it to some minds somewhat more intelligible. Evolution in its simplest form would then be the condensation of matter with accompanying loss of heat; and dissolution would be the disintegration of matter with accompanying increase of heat. Still better, perhaps, and even more definite than the original formula, would be to retain the word motion and define its kind. Thus: Evolution is the integration of matter with accompanying loss of atomic motion; and dissolution is the disintegration of matter accompanied with the increase of atomic motion. Thus, if final dissolution should come, by the members of the solar system falling into the sun, there would really be no gain of motion, but only a transformation of motion from that of masses into that of atoms, just as by the contrary process of evolution the motion of atoms is transformed into the motion of aggregates. In manifold forms these two antagonistic processes are constantly going on together, as the history of all being abundantly testifies; but while evolution now predominates in the aggregate, a time may come in the future when dissolution will gain the ascendancy.

Mr. Spencer's definition of simple evolution appears to be at fault in this, that it fails to express the fact that continuous integration and loss of motion may bring distinctive evolution to an end before there is any gain in motion with its accompanying disintegration. If our earth is to go the way the moon has gone—and Mr. Spencer believes it will—continuous integration and loss of motion thereon will put an end to all organization, all life, all development, all evolution. The backward process will

begin long, long before there is any accession of heat or motion to produce disintegration; and in this it comes to pass that the definition of simple evolution conflicts with the definition of complex evolution. Is not this also shown in the case of man, the highest organization we know? In old age integration with loss of motion is going on, but with the tendency toward simplification in the decline and loss of faculties—the precise opposite of evolution proper. Then it would seem that it is only to a certain extent that evolution accompanies integration of matter and loss of motion, and that when such integration and loss pass this limit, the reverse process sets in, and there is simplification and degradation long before there is increase of motion with accompanying disintegration; and the formula to be precise should make this exception and define this limit. We may venture to say that this new general feature of evolution which the author has introduced is only to be accepted with qualification. However, let that pass.

SECTION 148.—What is evolution in its more distinctive form? Change from the simple to the complex, from the vague to the definite, from the independence of parts to the dependence of parts. The organism which is at first only a cell, afterwards becomes a complication of cells with distinct and unlike functions. The simple organism may be cut into pieces, and each piece will develop into a perfect animal of its kind; but in higher and more complex organisms such a thing is not possible. Each part has become definite in constitution, and so dependent on other parts that the loss of one may cause death to all. As complexity increases the definiteness and dependence of parts, consequently the integration of the whole becomes more complete. In his first edition Mr. Spencer thus states the law of evolution: "Evolution is a change from an indefinite, incoherent homogeneity, to a definite, coherent heterogeneity; through continuous differentiations and integrations."—(216). In his new edition the author has modified this definition with both a prefatory and a supplemental part. He thinks that a "finished conception of evolution" is "one which includes the

redistribution of the retained motion, as well as that of the component matter." His revised definition is as follows: "Evolution is an integration of matter and concomitant dissipation of motion; during which the matter passes from an indefinite, incoherent homogeneity to a definite, coherent heterogeneity; and during which the retained motion undergoes a parallel transformation."—(396).

SECTION 149.—Evolution is the result of the play of forces in mutual relations of co-operation and antagonism with one another; and such action of the forces is governed by elementary principles concerning which it is necessary to make inquiry. The first to which it may be proper to call attention, is the direction of motion; and this is found to be along the line of greatest traction or least resistance, or their resultant. That it takes such direction indicates that motion takes place under resistance. This is found to be the case without exception; and what does it imply? It points unmistakably to antagonism in the action of the forces which are constantly seeking equilibrium and never attaining it. Mr. Spencer says: "From universally co-existent forces of attraction and repulsion, there result certain laws of direction of all movement. Where attractive forces alone are concerned, or rather are alone appreciable, movement takes place in the direction of their resultant; which may, in a sense, be called the line of greatest traction. Where repulsive forces alone are concerned, or rather are alone applicable, movement takes place along their resultant; which is usually known as the line of least resistance. And where both attractive and repulsive forces are concerned, or are appreciable, movement takes place along the resultant of all the tractions and resistances. Strictly speaking, this last is the sole law; since by the hypothesis, both forces are everywhere in action."—(288, 289: 225.—Here as elsewhere in this chapter the figures before the colon belong to the first American edition, and those after the colon to the second American edition, of *First Principles*.)

All motion takes place under resistance along the lines of least resistance; and this resistance is due to the action of forces

which do not move along the same line in the same direction, but which cross and meet one another at every possible angle, thus presenting a maze of conflicting lines of attraction and repulsion.

SECTION 150.—Rhythm of motion is a prevailing phenomenon in the action of the forces. Vibrating movement comes under this head. Wave motion illustrates it, and this is sometimes compound, as when a larger wave carries smaller ones. It is concerned in all those phenomena in which “extremes follow one another.” It may be truly said that all phenomena take place in careers of movement. In atmospheric currents, after one pulse of motion there is a lull, and this process is constantly repeated. Every blast of every storm conforms to the law. The progress of history is not made by a steady, uniform movement, but goes in waves of action and reaction. It is rhythmic. This rhythm of motion, like motion in the direction of least resistance, is true of motion, whether in its simplest or most complex forms; true in mechanics on earth and among the heavenly bodies, true in life, in mind, in society, everywhere. But what lies at the bottom of this rhythm as its cause? Rhythm is the form which motion assumes in taking the direction of least resistance, and is, therefore, intimately related to action and reaction, to antagonism in the forces. Mr. Spencer concludes: “Thus, then, rhythm is a necessary characteristic of all motion. Given the co-existence everywhere of antagonistic forces—a postulate which, as we have seen, is necessitated by the form of our experience—and rhythm is an inevitable corollary from the persistence of force.”—(334:271.)

This passage is none the less to the purpose that it shows how reluctantly the author admits the philosophical value of antagonism. He uses the co-existence everywhere of antagonistic forces in order to make rhythm a corollary of the persistence of force. He might have written:—Given the persistence of force—or given the invariable quantity of force, rhythm is the inevitable result of the universal co-existence of antagonism in the forces,—such antagonism being a postulate so radical as to be

necessitated by the form of our experience. We can readily see how rhythm is a consequence from the play of opposition among the forces; and there might be a partial remittance of certain forms of force, thus tainting the universality of persistence, and still would antagonism exist as the basis of rhythm in the action of the forces. Gravity might remit one-half its force every other hour, and thus invalidate persistence, but still the answer of the ocean-surface to the winds would be unequivocally rhythmic. Rhythm is not a corollary of persistence, but of antagonism.

SECTION 151.—In the first edition of *First Principles* there is a chapter on the Conditions Essential to Evolution, the leading points of which are embodied with larger philosophical meaning in the new chapter on Simple and Compound Evolution. Indispensable conditions of evolution are that there shall be a proper mobility of the parts, and that these shall be subject to the action of incident forces. If the parts cohere too firmly such forces cannot effect the change which evolution requires; and if they cohere too little they cannot retain the form of such changes as evolution requires. “The highest degrees of evolution are found in semi-solid bodies, or bodies that come midway between the two extremes specified.”—(First Edition, 337.)

Now, what is it that maintains this intermediate condition of bodies in which are manifested the phenomena known as evolution? It is the resultant of two antagonistic forces. If attraction in its several forms predominates, there is not sufficient pliancy to yield to the incident forces. If, on the other hand, repulsion prevails so far as to maintain either the gaseous or fluid state of matter, there is not sufficient permanency in the changes wrought by the incident forces, and there can be no evolution. Then, an essential condition of this process is, that the antagonism of these primordial forces, or forms of force, attraction and repulsion, shall maintain a proper balance between too great rigidity and too little. On the assumption of the nebular hypothesis, when there was too much heat—that is too much repulsion—there could be no evolution in the form of life; and if radiation should continue, a time will come when there will be too little heat

—not repulsion enough within the earth's sphere to maintain the plastic form of matter against advancing solidification, and evolution in the form of life will come to an end. There is little of interest for us in the phenomena of evolution, but what pertains to that intermediate state in which there is a proper balance of the antagonistic forces for the development and existence of animate forms.

But while this condition of intermediate mobility is that in which evolution finds its highest expression, it must not be forgotten that this implies in other ways the contact of forces. The cooling of the earth brought about contrast between its temperature and that of the sun. Daily rotation and the action of the sun secured the alternation of less and greater heat within moderate limits, involving activity and rest as a condition of organic evolution. The very nature of an incident force or external influence, like the sun's rays, is that it shall, not figuratively, but literally, act on the aggregate to mold it into new forms by overcoming resistance. In simple mechanical action, a jar facilitates readjustment. Vibratory motion has wide range from the invisible to the visible, and without it there could not be such readjustment of parts as evolution requires; and vibratory motion, as of heat and light from the sun, involves action and reaction—antagonism in a modified form.

SECTION 152.—Next, the instability of the homogeneous and the multiplication of effects. The result of the action of forces upon each other is that, what may have been throughout alike comes to be unlike in its parts; and this unlikeness increases under the continued action and reaction of agencies which themselves become more and more unlike. Thus, any force radiating from a point outside of, and capable of effecting changes on, a sphere, will act very differently on different parts of it, and produce contrasts in the effects. The center of the surface next the force would be most affected, while the opposite side of the sphere might not be affected at all. The contrast of results would arise in consequence of the contrast in the situation of the parts with respect to one another, and to the force

which acts upon them. The action of the sun on the earth is a familiar example of this law.

If it were possible for a body to be perfectly homogeneous in all respects including the situation of its parts (which it is not), and this body were exposed to the effective action of unlike forces, its homogeneity would be changed into heterogeneity. It makes no difference whether we speak of force acting on matter, and matter reacting on force; or whether we resolve matter into its ultimate form of force as best known to consciousness, it is still true that the action between the forces and the matter, or between the forces and the forces, is reciprocal. One force in whatever form cannot act on another without itself being acted on. This mutual action and reaction lead to complicated results, for no sooner is the homogeneity or the minor forms of heterogeneity disturbed than the multiplication of effects begins, and a low grade of complexity prepares the way for still greater complexity. These results cannot be contemplated without having in mind that form of antagonism which is known as action and reaction.

SECTION 153.—To the next succeeding chapter, Mr. Spencer has given the title of Differentiation and Integration, while the subjects treated of appear to be segregation and integration [I retain this criticism which was independently made from a study of the chapter; and singularly enough the same chapter in the new edition (1877) is placed under the head of Segregation, simply]. By differentiation the units or parts are made unlike, and this comes about in consequence of the instability of the homogeneous and the multiplication of effects. Were there not some process or processes by which the unlike could be separated, and the like brought together, the heterogeneity which results from the transformation of the uniform into the multi-form, might be an indefinite and disorderly, and not as we know it to be, a definite and orderly, heterogeneity. But by the separation of the unlike and the integration of the like, larger units are established with definite relations to one another. The same relations in the manifestations of force which produce

unlikeness by differentiation, also separate the unlike and bind together the like. In both cases, it is the unlike character of the objects acted upon by the forces, or the unlike character of the forces which act upon the objects; and evermore there is action and reaction.

Mr. Spencer summarizes as follows: "First, that like units, subject to a uniform force capable of producing motion in them, will be moved to like degrees in the same direction. Second, that like units if exposed to unlike forces capable of producing motion in them, will be differently moved—moved either in different directions or to different degrees in the same direction. Third, that unlike units if acted on by a uniform force capable of producing motion in them, will be differently moved—moved either in different directions or to different degrees in the same direction. Fourth, that the incident forces themselves must be affected in analogous ways: like forces falling on like units must be similarly modified by the conflict; unlike forces falling on like units must be dissimilarly modified; and like forces falling on unlike units must be dissimilarly modified. These propositions admit of reduction to a still more abstract form. They all of them amount to this:—that in the actions and reactions of force and matter, an unlikeness in either of the factors necessitates an unlikeness in the effects; and that in the absence of unlikeness in either of the factors the effects must be alike."—(438: 481).

Throughout all these manifold forms of action, conflict is obvious; without it, the phenomena of differentiation and integration by which heterogeneity arises and assumes the form of evolution, could not take place. No principle which Mr. Spencer has brought to light, is fuller of meaning than this of segregation by which order is brought out of chaos and direction given to development.

SECTION 154.—A body in motion would continue to move forever in the same direction if not disturbed by some external force. In the inorganic realm this is called "inertia." A similar principle in the organic realm is known as "heredity." By

virtue of heredity, organic forms persist from one generation to another without change. The offspring is like the parent, and the links of the genealogical chain are all alike. A moving body is exposed to many causes of disturbance, and its motion is liable to be deflected from a straight line. The same is true of the organic form. It is exposed to modifying influences, and the offspring is liable to vary from the precise form of the parent. The organism must be adapted to the external conditions with which it has to do; and as these conditions are constantly changing, corresponding changes must arise in the organism, else it would suffer disadvantage, and perhaps perish. Under the action of the environment, such variations in the organism as are best for it, would be most likely to spring up; but if such as are detrimental should arise, there is a "first principle" which would prevent their persistence. Reference is made, of course, to "natural selection," an element of the problem to which Mr. Spencer has not given sufficient prominence in his treatment of First Principles. In connection with the multiplication of effects and the integration of the same, natural selection is a powerful factor in the phenomena of development. And whatever may be the part which antagonism plays in differentiation and integration, it is especially conspicuous in guaranteeing such integrated forms as may afford most fitness for survival in the midst of hostile forces animate and inanimate.

In this connection antagonism appears under different forms. The persistence of type and the variation of type are opposite phenomena. Variation takes place under the play of action and reaction between the organism and its environment. And without universal antagonism in manifold and varying forms, natural selection could not take place. Its peculiar power in evolution is dependent on the many-sided conflict between individuals, groups, species, on ground favorable or unfavorable to the differently qualified contestants,—a complication of antagonism which shapes results, and determines what individuals and races shall be the victors and survivors.

SECTION 155.—It is not the purpose of this statement to present a view of Evolution and its principles, but only such hint of them as may be necessary to show that the antagonistic action of forces is concerned in all of them. Mr. Spencer's chapters on the subject are not only a statement of evolution, but an example of it, and they are entitled to a high place in the modern curriculum of culture and intelligence. The concluding chapter, that on Equilibrium, is a luminous one. The conflict of forces is more obvious in the phenomena of equilibration than in some others already discussed. Equilibration has reference, of course, to the balancing of opposing forces ; and though we may not fully agree with the author on this subject, his full and complete recognition of antagonism has all the more weight for the doctrine of conflict which it is the purpose here to illustrate.

We quote : "In all cases then, there is a progress toward equilibration. That universal co-existence of antagonist forces which, as we before saw, necessitates the decomposition of every force into divergent forces, at the same time necessitates the ultimate establishment of a balance. Every motion being motion under resistance, is continually suffering deductions ; and these unceasing deductions finally result in the cessation of the motion."—(441, 442 : 484, 485). "So long as there remains a residual force in any direction—be it excess of a force exercised by the aggregate on its environment, or of a force exercised by its environment on the aggregate, equilibrium does not exist ; and therefore the redistribution of matter must continue. Whence it follows that the limit of heterogeneity towards which every aggregate progresses, is the formation of as many specializations and combinations of parts, as there are specialized and combined forces in the unit."—(448: 490). Again, in relation to the emotions : "And thus the ultimate state, forming the limit towards which evolution carries us, is one in which the kinds and quantities of mental energy daily generated and transformed into motions, are equivalent to, or in equilibrium with, the various orders and degrees of surrounding forces which antagonize such motions."—(465 : 507).

Attraction and repulsion which divide the empire between them in all minor phenomena, are equally rivals in that inconceivable totality of phenomena, known as the universe. At the close of a magnificent speculation, Mr. Spencer says: "Apparently, the universally co-existent forces of attraction and repulsion, which as we have seen, necessitate rhythm in all minor changes throughout the universe, also necessitate rhythm in the totality of its changes—produce now an immeasurable period during which the attractive forces predominating, cause universal concentration, and then an immeasurable period during which the repulsive forces predominating, cause universal diffusion—alternate eras of evolution and dissolution."—(482 : 537).

SECTION 156.—It is not the intention to rest this doctrine of antagonism on the authority of Herbert Spencer; it has its basis in facts which are open to the commonest observation. The writer held this doctrine and had mentally worked it out in some of its relations years before he knew of Mr. Spencer, or had opportunity to read his *First Principles*. But it must be mentioned that this great author has had no theory of antagonism to bring into prominence, and consequently has not been biased in favor of any such view of the constitution of nature. His bias took a very different direction, and with evident partiality, he has pressed the persistence of force as the cardinal principle and factor of evolution. We have not far to look for the probable reason of this. Mr. Spencer imagines that he finds in force as known to consciousness, something akin to what he calls absolute force, which is but another name for the unknowable—a philosophical child of the author's, which it would be unnatural for him to neglect. It is not to be imagined for a moment that without persistence there would be evolution. That, however, is not the point. Persistence may be essential to evolution; but at the same time there may be some other principle equally essential, and much more variously and conspicuously so,—and indeed even more fundamentally so.

We have quoted Mr. Spencer to the effect that the direction of motion is due to "the universally co-existent forces of attrac-

tion and repulsion;" nevertheless, he eventually resolves it into the persistence of force. It is very true that the laws of motion as known to science, could not be laws, if force were not persistent; but granting force to be, not persistent, but intermittent or remitting, would not motion still take place in the direction of least resistance? Motion is due to force; and in a sense, the continuity of motion to the persistence of force; but the direction of motion is a very different thing. Suppose gravity should suddenly remit one-half its force just as you throw a pebble into the air; would not its direction conform to the law of least resistance or greatest traction precisely as before? Even if the earth's attraction should suddenly change into repulsion, the pebble would just as surely observe the same law of motion. If two currents of equal volume and force were meeting, and one of them should suddenly remit half its force, the two currents on meeting would still obey the law of motion in the direction of least resistance. However fitful the intermission or change of force might be, it is impossible to conceive of an instance in which motion would not obey this law. Persistence, distinctively as such, has nothing to do with it; it is *force* under the forms of *attraction* and *repulsion*, in consequence of which, motion always takes place under resistance, that determines the *direction* of motion in the line of least resistance.

In like manner Mr. Spencer affirms that the instability of the homogeneous and the multiplicity of effects are due to persistence. It is admitted that antagonism plays a part here as elsewhere, but he contends that it does so because it is what he calls a corollary of persistence. Let us take a supposition of his own: "If centres of force, absolutely uniform in their powers, were diffused with absolute uniformity through unlimited space, they would remain in equilibrium."—(386: 429). That is their stability would be complete. This assumes the persistence of force—it would be the case if force were persistent; but suppose that the forces in certain parts of the system were fitfully intermittent, what would become of the stability of the system? In this strongest of supposable cases, in which persistence would

even maintain absolute stability, non-persistence would overthrow it. And in relative stability or equilibrium, the irregular loss or gain of force in default of persistence would disturb the balance and produce inevitable change. All that Mr. Spencer has succeeded in doing, and all that can be done from the very nature of the case, is to show that in the universe as known to us, the persistence of force, while not the cause of the instability of the homogeneous, is, nevertheless, compatible with it.

The same precisely is true of the multiplicity of effects. Take the case of a force radiated upon a sphere from a point outside of it. Suppose that the rays falling on the center of the hemispherical surface should be arbitrarily intensified and the outer rays weakened in default of persistence, then would the disparity of effects be greater than under the integrity of persistence. By the fitfulness of force, effects might multiply even more rapidly than by persistence. The multiplication of effects is due, not to force, in its homogeneous character of persistence, but to force in its dual character of action and reaction, attraction and repulsion.

SECTION 157.—I do not forget Mr. Spencer's position that the persistence of force is only conceivable under the antagonistic forms of attraction and repulsion. I quote: "Matter cannot be conceived except as manifesting forces of attraction and repulsion. Body is distinguished in our consciousness from space, by its opposition to our muscular energies; and this opposition we feel under the two-fold form of a cohesion that hinders our efforts to rend, and a resistance that hinders our efforts to compress. Without resistance there can be merely empty extension. Without cohesion there can be no resistance. Probably this conception of antagonistic forces is originally derived from our flexor and extensor muscles. But be this as it may, we are obliged to think of all objects as made up of parts that attract and repel each other; since this is the form of our experience of all objects."—(287: 224).

The following is an example of the way in which the writer pushes persistence into the first place: "The necessity we are

under of conceiving force under the two-fold form of attraction and repulsion, turns out to be but an implication of the necessity we are under of conceiving Force as persistent.”—(497: . . .). He affirms repeatedly that the equality of action and reaction is a corollary from persistence; and we quote once more: “Thus from the existence of a force that is forever unchangeable in quantity, there follows, as a necessary corollary, the co-extensive existence of these opposite forms of force—forms under which the conditions of our consciousness oblige us to represent that absolute force which transcends our knowledge.”—(484: 515). By reversing the terms of this proposition, it may be made to read:—From the co-existence of these opposite forms of force in which action and reaction are equal, there follows as a necessary corollary, the existence of a force that is forever unchangeable in quantity:—and this expresses the historical, and in all probability, the necessary order of these two conceptions.

The persistence of force simply means that, whatever the form it may assume, its quantity is unalterable, never more, never less. Like the unalterable quantity of matter, it was not known until proved by quantitative experiment. It may be easy now to establish these truths by the *a priori*, or system-building method; but the method lies under suspicion, since its most brilliant achievements are won after the fact is known. All that was vaguely known of persistence before it was proved by scientific experiment, was derivable from the varied experiences of life in relation to force, and of which attraction and repulsion, action and reaction, conflict in its various forms, constituted the most noticeable feature. These opposing forms of force were well known; persistence properly such was not known; and if either is a corollary from the other, the conception of persistence is a corollary from the conception of antagonism.

It will not detract from the fundamental character of these opposite forms of force, to qualify the conception of them, as “forms under which the conditions of our consciousness oblige us to represent that absolute force which transcends our knowledge.” It is with knowledge, and not with the absolute that we

are here concerned; and it is this very necessity which the nature of our consciousness imposes on us, that gives its highest value to the conception of force as dual and opposite in character. Whatever his speculations concerning the absolute, Mr. Spencer does not permit himself to go outside of consciousness in what concerns the relative. Our consciousness is the very highest court to which appeal can be made in a case of this kind, and when it decides in favor of necessary conflict in the original nature of force, that settles it. What else shall we go by but consciousness? "Universally co-existent attraction and repulsion" are by the necessary constitution of our minds, the ultimate forms under which we conceive of force. Our conception of the universal equality of action and reaction as a necessary property of force, is the original, and persistence the derived.

This view is made stronger by the fact that the most primitive element of knowledge is the sense of resistance. By this we get our first and most elementary conception of external things. It is the basis of all that is built up in consciousness; and this sense of resistance unequivocally involves the antagonism of force, the equality of action and reaction. Admitting that "this conception of antagonist forces is originally derived from the antagonism of our flexor and extensor muscles;" that does not belittle the fact of antagonism. Whence came the flexors and extensors and other opposing muscles, the supinators and pronators, the abductors and adductors, etc.? By the light of Spencer's own philosophy, from development in response to ever-present and ever-active antagonism in the environment. "The maintenance of such a moving equilibrium [the organism] requires the habitual genesis of internal forces, corresponding in number, directions, and amounts to the external incident forces—as many inner functions, single or combined, as there are single or combined outer actions to be met." "The final structural arrangements must be such as will meet all the forces acting on the aggregate by equivalent antagonistic forces."—(459:501.) This recognizes external antagonism as primary and organic antagonism as secondary. These final structural arrangements,

these opposing muscles are not so surely the source of our conception of antagonism, as they are the product of this same antagonism. The system is a unit, and it everywhere involves conflict.

SECTION 158.—In the new edition of *First Principles* (192a–192d), the author takes the position that we cannot prove the persistence of force, because our proofs necessarily assume the truth of persistence. This is a refinement of metaphysical subtlety which we think fails of its object. The author holds that there is such difference between the indestructibility of matter, the continuity of motion, and the persistence of force, that while the first and second can be proved, the last is an original truth which admits of no proof. “Persistence of the space-occupying species of force cannot be proved; for the reason that it is tacitly assumed in every experiment or observation by which it is proposed to prove it.” But what is this space-occupying species of force? It is that which resists the touch. “Without resistance there can be merely empty extension.” Space-occupying force offers resistance; it is matter—it is what all through the volume Mr. Spencer means by the word matter. Then, since matter and such force are identical, matter cannot be proved indestructible any more than force can be proved persistent. If in the one case the point to be proved is assumed in the proof, it is so in the other and persistence and indestructibility, as well as force and matter are resolved into one and the same thing.

Mr. Spencer rests the correctness of this exegesis on the nature of that cardinal element in all systematic knowledge, the unit of linear extension, which derives its importance in this relation from our unwavering confidence in its constancy. All science is built up on the fact that this unit of measure is a uniform quantity. Its value is a practical one; it is the practical unit of measure we have to deal with:—whence does this get its value so as to secure our confidence? From observation and comparison by which its practical reliability is proved, just like any other instrument of research, or fact of science. This

practical unit of measure does not challenge our faith independent of experience. "These spaces between marks" can only be made to exist on matter, and we only accept them in use when the linear uniformity of the spaces has been thoroughly tested and verified. If, on the other hand, this linear unit is more than this or something else,—if it is not what is defined as space between marks on a mass of matter—then it is something which exists only in the mind—it is an idea or conception. But even in a practical point of view our ultimate faith in the constancy of the linear unit is built up on our more radical faith in the constancy of our perceptions. We detect the difference in things on the assumption of such perceptive constancy;—and is it not right here that we find the constant, the unalterable? If we could not trust our senses, we could not determine that any unit of measure is constant and reliable; and, consequently, could have no confidence in the accuracy of its work, and there would be no physical science. Then does this confidence in the uniformity of the linear unit assume the truth of the persistence of force as a general principle? It resolves itself ultimately into confidence in our mental integrity—into confidence in the generalization based on the integrity of perception, and we believe in the constancy of the linear unit on the ultimate warrant of experience. Mr. Spencer regards our consciousness of space as built up out of our experience of the resistance offered by external objects in space. Our confidence in the unit of linear extension is a necessary part of this consciousness of space and cannot be divorced from experience. The mind accepts its "intuitions" of space because it must, and without demonstration. Precisely the same is true of our consciousness concerning the uniformity of the linear unit. Through experience it has become organized into the mental constitution as a part of it. The mind has a fixed consciousness of the uniformity of the linear unit, and it accepts such uniformity because it must and without demonstration; but it does not so accept the general doctrine of persistency. This general doctrine no more follows from the accepted constancy of the linear unit than

from the constancy of the axiom that "all right angles are equal to each other." The fact of persistency may, indeed, on theoretical grounds, lie at the bottom of all this; but only some minds so recognize it after a great deal of philosophical refinement which constitutes no part of the general mental experiences of the human race. The uniformity of the linear unit has all along been accepted without the least consciousness that it had anything to do with a general principle concerning the unalterable quantity of force; just as the axioms of mathematics may be accepted without the least consciousness of any necessary connection with the mathematical demonstrations which assume their truth. The fact that the general principle of persistence had to be proved by experiment involving ingenious devices of measurement, thereby showing it to be a principle which lies outside the common interpretation of experience, is fatal to the assumption that it is an ultimate datum of consciousness. No sane mind ever doubted that an inch is an inch and a pound is a pound; and these original data are necessary in reaching that other truth, the persistency of force; and the former does not imply the latter any more than the truths of mathematics take for granted the universality of gravitation. Force might be persistent in the stable form known as matter on which the linear unit is marked, without being necessarily persistent in those more subtle forms to which the term is usually applied; and it might be accepted as persistent in the one case, and still remain to be proved persistent in all its other diversified forms. This was precisely the situation till very recently. The general principle of persistence and the uniformity of a given space are two distinct and unlike things, just as the law of gravity and the unit of weight are two distinct and unlike things. The constancy of the units of length and of weight is taken for granted on the basis of experience, in the demonstration both of the law of persistence and the law of gravity, but they are not for that reason to be confounded with either.

But Mr. Spencer goes further than this. He concludes that: "The force of which we assert persistence is that absolute force

of which we are indefinitely conscious as the necessary correlate of the force we know. By the persistence of force, we really mean the persistence of some cause which transcends our knowledge and conception. In asserting it we assert an unconditional reality, without beginning or end."—(192*d*). What then are the author's points? First, that in assuming the constancy of the linear unit we assume the persistence of force, because both are qualitatively one and the same thing; and secondly, in accepting the persistence of force as we know it, we accept the persistence of an absolute force; therefore, the constancy of the linear unit involves the persistence of absolute force. The series of *qualitative* equivalents would be as follows: (1) The constancy of the linear unit=(2) the persistence of force=(3) the persistence of Absolute Force=(4) the Unconditioned Reality=(5) the Unknowable. Is not that overstrained and far-fetched? Is not, indeed, the first term of the series totally unlike the second in kind, while the second is unlike the third, fourth, and fifth, in kind, the series itself being a heterogeneous absurdity?

Having quoted Mr. Spencer in favor of the universality of antagonism, in which I believe he is right, it would be unjust to withhold his view concerning the still greater value of persistence, in which I believe he is wrong. And having so quoted, it becomes a necessary part of the argument to make good the view I hold concerning the precedence of antagonism.

SECTION 159.—One of the last volumes which the writer consulted with a view to the final revision of this work, was Chancey Wright's Philosophical Discussions. I was much surprised as well as gratified to read the following: "With a view to such assimilation, and in opposition to 'the law of evolution' as a generalization from the phenomena of growth, we will now propose another generalization, which we cannot but regard as better founded in the laws of nature. We may call it the principle of *counter movements*,—a principle in accordance with which there is no action in nature to which there is not some counter action, and no production in nature from which in infinite ages

there can result an infinite product. In biological phenomena this principle is familiarly illustrated by the counter-play of the forces of life and death, of nutrition and waste, of growth and degeneration, and of similar opposite effects. In geology, the movements of the materials of the earth's crust through the counter actions of the forces by which the strata are elevated and denuded, depressed and deposited, ground to mud or hardened to rock, are all of the compensative sort; and the movements of the gaseous and liquid oceans which surround the earth manifest still more markedly the principle of counter movements in the familiar phenomena of the weather."—(10).

This fully recognizes the general doctrine of conflict, but the author was doubtless in error in setting up this principle as a rival of evolution for philosophical honors. One does not exclude the other; they are co-operative. Both are true each in its own appropriate sphere. Evolution is the more partial fact; conflict in active form, or ever ready to be called into action, is everywhere present. Conflict is present whether the phenomena be those of evolution, degradation, or dissolution. None of these can take place without conflict. While evolution is going on in one department of nature, degradation may be going on in another, and conflict is the *sine qua non* of both. And wherever there is evolution, it always passes at length into dissolution as the counter form of the career; conflict never ends. The career of evolution, degradation, and dissolution is true of individuals; it is true of races; it is true of societies; it is true of all national existence; it is true everywhere and of everything. At particular periods evolution predominates, but it is impossible to foretell when these periods may come to an end. Herbert Spencer deprecates the criticism of Leslie for looking too exclusively at isolated cases; he insists on taking the whole, and then he affirms that evolution is prevailing, and characterizes the phenomena in general. That is true sometimes and in some fields; but at other times and in other fields, it is not true. It is true of organic development on the planet; but there is no known principle which enables us to settle when that development shall

reach its maximum and begin to decline. It is not true that development has generally prevailed in the aggregate of human societies. There have been times when for centuries together degradation was the prevailing tendency. A philosopher thrust into the tenth century could not have looked hopefully on the signs of evolution in comparing the darkness and degradation of that period with the departed light and glory of ancient Greece and Rome and of primitive Christianity. It is true that social evolution prevails in our own times ; but we have no assurance that it will last for a long period in the future. The assumption that it will may overlook many causes somewhat obscurely at work which will react as fatally against the present civilization, as other causes reacted against the Greek and Roman. Organic development may have already reached its maximum of excellence. It may go no further, or very little further, even in the brain of man. It may be different, however, with societies. Social evolution has probably a long period before it, and great changes may be in store for the future in the line of ascent ; but this is liable to arrest and decline in the future as well as in the past. As one society or form of society goes up another goes down. While evolution is going on there is always present and mingled with it some form of degradation. What the aggregate result of such complication of conflicting causes may be at any period, there are at present no means of determining. If we look at the aggregate, as Mr. Spencer advises, we must totally reverse his affirmation of general evolution,—if we only look far enough. The great society which arises and exemplifies evolution in the first part of its career, degradation later on, and dissolution at last, is a type of all societies, of all humanity. This must be acknowledged when we study the past and look into the distant future ; and it probably would come on earth through the operation of social and moral causes, whether the physical co-operated with these to bring it about or not. And lastly, what is true of a worn out world—of our moon, will be true of the solar system by and by ; and the last stages illustrate the predominance of dissolution over evolution, if not, indeed,

the complete displacement of evolution by dissolution. Then evolution is a partial fact. It does not cover all the phenomena of life and existence, but only a portion thereof. It does not extend the entire length of careers, but only a part of the way. To be sure, Spencer teaches all this, but appears at times to overlook it in the optimistic haze of evolution. Evolution is a very great fact; it names a principle which Conflict does not and cannot name; but there are immense fields of activity in individual life, in the life of societies, in the life of worlds, in which evolution has no part; but there is no field in all the wide domain of existence in which the conflict of forces plays not evermore. Evolution is but one of the currents of the great stream of conflict which is flowing from one eternity to the other, and bearing with it all things from the fathomless ocean of the past into the equally fathomless ocean of the future.

SECTION 160.—It remains to add still another qualification—that concerning the possibilities of equilibration, also involving dissent on a vital point. Mr. Spencer believes in complete equilibration, or at least, in what comes indefinitely near to it. In regard to the conflict between conservatism and reform, he says: “This process now so far advanced among ourselves that the oscillations are comparatively unobtrusive, must go on till the balance between antagonist forces approaches indefinitely near perfection. For, as we have already seen, the adaptation of man’s nature to the conditions of his existence, cannot cease until the internal forces which we know as feelings are in equilibrium with the external forces they encounter (470: 512). Also, “And the ultimate abolition of all limits to the freedom of each, save those imposed by the like freedom of all, must result from the complete equilibration between man’s desires and the conduct necessitated by surrounding conditions.”—(471: 513).

If this view be correct, what the author calls perfection, what others call harmony, will eventually come out of the “co-existence of attraction and repulsion”—out of antagonism everywhere in the forces of nature. On *a priori* grounds this result

would seem to be an improbable one. This conflict between two opposing forces, according to our best light on the subject, as already stated, is the *sine qua non* of every form of evolution from the nebular condition of existence till now. All physical activity, all life are conditioned by the play of forces not in equilibrium. There is no life without motion, and motion never takes place but under resistance. Without conflict there can be no activity and no life. So far as there is any warrant in consciousness, perfect equilibrium would be absolute death, the extinction, indeed, of all existence, even of matter itself. It is thus stated by a high authority in science: "Matter longs for rest; when is this longing to be satisfied? If satisfied, what then? Rest is not perfection, it is death. Life is only compatible with mutation; when equilibrium sets in, life ceases, and the world thenceforward is locked in everlasting sleep." And later: "Many years ago I found myself in discussion with a friend who entertained the notion that the general tendency of things in this world is toward an equilibrium of peace and blessedness to the human race. My notion was that equilibrium meant not peace and blessedness, but death."—(Tyndall).

Still there is equilibrium in the sense of a general balance of forces. If, as we have reason to believe, the universe is a scheme of antagonistic forces, they must in a general way balance each other, as a necessary condition of general stability. Every disturbance of equilibrium must be able to recover itself, else there would be no assured warrant for the maintenance of the system. The kind of equilibrium which really exists is that which involves fluctuation—the equilibrium of the swinging pendulum or of the wave-rocked sea; and without such fluctuation, equilibrium would be quiescence and death.

SECTION 161.—The conception of equilibrium is one which may be variously interpreted. The "moving equilibrium" is a form of it which is derived from mathematics; and if there were no irreversible changes going on in the solar system which will eventually bring about its destruction, it would be a perfect example of a moving equilibrium. But when we leave mechan-

ics and come to living things the designation is misleading, unless we so qualify it as to mask the usual meaning of the word. Mr. Spencer defines it as the "dependent moving equilibrium;" but even thus qualified it is necessary to guard against the obtrusion of inferences which are suggested by the usual meaning of the word, but which are excluded by this peculiar use of it.

The organism has a beginning, a career of development, and then it undergoes decline, and at last suffers dissolution. If we saw the individual organism only during the period of development, with its powers constantly multiplying and enlarging, we might predict for it a golden age, or period of perfection. It is held that the course through which the organism passes illustrates several forms of equilibration; yet, as we have seen, it is a perpetual battle of forces in which dissolution always triumphs in the end over integration. If we saw it only in the heyday of its existence, as we see the solar system, we should perceive a gratifying average of balances,—Mr. Spencer's third form of equilibration. But this is equilibration only so far as a constant alternation between opposing forces for the most part equal, constitutes equilibrium. We are compelled here to contemplate the constant struggle between waste and repair; and the two alternate for a time, but waste always gets the upperhand, and comes off victor; and that is the end of the moving equilibrium. There is an infirmity ever present in the grain of it which insures its destruction. Mr. Spencer, of course, recognizes this fully and claims it in illustration of the fourth and last form of equilibration. What we here insist upon is that these analogies of the "moving equilibrium," so constantly exposed to disturbance, as every form of it is, and most of all in society, afford no sufficient warrant for optimistic anticipation of the future results of evolution, when the equilibrium between man and his environment is to be complete and in every way secure from painful disturbance.

When the equilibrium of the organism appears to be most complete, the necessary waste is accompanied with more or less pain.

Hunger must be ranked with the uneasy and somewhat painful feelings of the animal system; and when the organic equilibrium is in its best working order, the sensation of hunger is capable of becoming most acute. The desire for food involves pain till gratified; and the gratification can only come by mental and muscular exertion; and this exertion causes in part the waste it is intended to repair. The means of repairing the waste can only be procured by overcoming resistance; and this is attended with more or less pain which is only endured as the alternative of still greater pain in the form of ravenous hunger from the extreme of unrepaired waste. So far as man is concerned, he once depended on the uncertainties of capture, and had to watch or pursue, and then, perhaps, to fight in a doubtful conflict, often enduring without food for days, though suffering less than civilized man would under like circumstances. In the agricultural state there was the pain of care and labor under exposure, and with all the modern appliances, long hours of painful toil are still needful, and millions suffer daily for want of the full necessities of life. And though optimists may explain this as an incident of immature development, we have the authority of Mr. Spencer to the effect that, as the race grows older, and evolution further advanced, the struggle of life will be more and more intense, necessitating a greater expenditure of nervous energy, and more thoroughly exhausting the individual organism, even to the narrowing of its capacity for reproduction.—(Biology, Vol. II., Part VI.) This is not perfection, it is not harmony except under strain, it is not the equilibrium that brings peace, it is conflict with attending pain to the end. And as an indication that the dream of a universal, pleasure-giving equilibrium is incompatible with the constitution of things, it may be stated here briefly, to be given a little more fully in the next and other chapters, that, without the hardships through which the race has passed, man would now be a feebler creature than he is—feebler in both mind and body, and more at the mercy of any adverse incident that might affect him. It is the habit of resistance, the use of brain and muscle in conflict that has developed his

energies for all manner of achievements; and if the day ever comes, when the equilibrium between man and his environment is so complete, that he will be called upon to endure no hardships and make little exertion to beat back adversity, we may well question whether the result would be optimistic. On the cessation of one form of evil a greater might befall.

It must not be forgotten that by the very conditions of existence, conflict and discord have prevailed from the beginning till now; and that with the multiplication of effects has kept pace the multiplication of forms of conflict. In the nebula it was little more than attraction and repulsion; just before the dawn of life, it was still purely physical; and then was added conflict between living things, and between the animate and the inanimate. Still later, mind came into existence and added new forms of conflict, and then society developed more and more, and moral discord emerged into existence, ever branching into new and diversified features; till now, no words can adequately portray the manifold forms of antagonism which prevail in the diversified constitution of things. In early times pain did not accompany the conflict of forces. When life had advanced sufficiently, pain came into existence;—and if optimists and pessimists had been there they might have quarreled then as now. “See the misery that is coming into existence, and on the increase,” says the pessimist. The optimist replies: “See the pleasure accompanying life and on the increase with every advance in evolution.” Both would be right; but it is necessary to add the two observations together to get the whole truth. In our day, the pessimist says, “There is manifestly more pain during the present geological period than during any other, or indeed all others, since the world began.” The optimist affirms the same thing of pleasure and enjoyment;—and both are right. But when the pessimist goes further and says: “There is now and always has been since sentient existence began necessarily more pain than pleasure,” he affirms what he cannot make good. And when the optimist says: “All this pain is but an incident of development to be eventually outgrown, when equilibrium,

harmony, and happiness will reign," he affirms what is still without sufficient warrant. Then, both are wrong.

The few preceding paragraphs may have raised a host of importunate suggestions which perplex and confound rather than satisfy. The enquiry turns mainly on this point: Is conflict involving pain inevitable and ineradicable? In a preliminary way—to be discussed in future chapters—it may here be affirmed that it is. Now, granting this to be correct, then, first: It does not follow that pessimism is true, since conflict and discord may never cease, and yet there may be far more enjoyment than suffering in the world. And secondly: Although the aggregate of pleasure may outweigh the aggregate of pain, optimism may still be untrue in its assumption that pain can be wholly eradicated from existence.

PART FIFTH.

EVIL IN RELATION TO THE NECESSARY CONDITIONS OF LIFE.

CHAPTER XXIII.

PARADOXES OF FEELING IN RELATION TO FUNCTION.

SECTION 162.—A principle of action in relation to function and development, bearing on the questions we have raised, but always overlooked by pessimists in answering them, should here receive attention. It is this: Functional activity which strengthens and preserves the organism, is predominantly pleasurable. The taking of food by which the individual is conserved, and the union of the sexes by which the race is continued in existence, are pleasurable acts. If they were painful the individual might perish for want of nourishment, and the race would come to an end. A certain measure of muscular exertion is accompanied with pleasure, as in the gambols of the young, and this is a condition of vital energy and muscular development. So rest after fatigue, and falling asleep after wakefulness, are pleasurable, and necessary to the restoration of vigor. The exercise of the several senses on their appropriate objects, and of every primary function in the economy of life, is attended throughout with organic pleasure as an essential condition of such exercise.

The obverse of this is equally true. If invigorating and useful acts and influences are pleasurable, those of opposite character are painful. A cut, bruise, or burn, lesion of any kind, starvation, surfeit, freezing, overheating, breathing a vitiated atmosphere, all have a depressing influence on the vital energies and all are accompanied with pain. The loss of friends, or of property, disappointed hopes, any form of defeat in the conflicts of life, are depressing on mind and body, and are painful. Professor Bain generalizes a considerable body of facts as follows: "States of pleasure are connected with an increase, and states of pain with abatement of some, or all, of the vital functions."—(Sens. and Int. 288).

This is true not only of habitual function which maintains the integrity of the individual, but of those innovations of function which evolution implies. If the variation gives an advantage its use is attended with an addition of pleasure. Greater speed or strength, sharper and longer teeth and claws, keener scent, hearing, and sight, all would give additional pleasure in the exercise. This is not more true of physiological than of mental functions. Cunning, sagacity, invention, every mental acquisition which gives superiority in the trial of powers for which life ever affords the arena, would be attended in the exercise with an additional thrill of pleasure. The relation of pleasure to function is probably a condition which affects the play of natural selection.

But suppose this dual principle to be reversed, so that the necessary conditions of living and of evolution were accompanied with pain instead of pleasure,—so that painful function should invigorate the system and pleasurable function weaken it, what would be the result? There could be no animate existence under such conditions. The conception that a preponderance of pain was possible from the first as an intimate accompaniment of vital action involves an absurdity which biology refuses to entertain.

There is no conscious sensation in plants or in the lower animal forms; what, then, is the guide to development in them? Motion in the direction of least resistance. In forms in which

conscious sensation has place, the fact that pleasure is connected with increase of vital function, indicates that such function is essentially but a higher form of the principle in physics and in the lower organic realm, that motion takes place in the direction of least resistance. Any deviation would meet with greater resistance, that is, with pain or less pleasure ; hence in the avoidance of painful and the election of the most pleasurable sensations, actions are guided along the channel of easiest movement, and the greatest possible pleasure is the leading motive of organic action. The child at first has little directive control of its movements, but by experience it makes a double acquisition ; for while it learns to direct its muscular movements toward particular objects, it learns to direct them in such way as to avoid pain and find pleasure. The morsels of food which it brings to its mouth give pleasure, and it elects to repeat the action ; if they gave pain it would soon choose to let them alone. These primitive determinations of will by experience illustrate the law of motion in the direction of least resistance, in that they follow the lead of pleasure to those actions which contribute to the welfare of the individual.

SECTION 163.—In close connection with this principle, is there a general fact of social life which has a very important bearing in relation to the predominance of happiness among mankind. People with the cheerful, happy temperament are more attractive than the morose and gloomy, and by consequence usually marry younger, thus adding to the proportion of people with happy dispositions. The phenomenon resolves itself essentially into the increase of buoyancy and vigor through the pleasurable exercise of the affections. If it were more prevailing than it is, the world would be still more largely the gainer. If all were endowed with that elasticity of temper which always springs back whatever the vicissitudes of fortune, the ills of life would count for less than they do.

This principle has operated no doubt among civilized and mixed peoples more than among the more primitive types of simpler and less divergent mental mold. But, while it has cut

off to a certain extent the depressed and unsocial, and increased those abounding in sympathy and animal spirits, it has also cut down the proportion of the more intellectual and prudent who are more likely than those of the opposite mental cast to enter wedlock later in life. Still, no doubt, the principle has contributed quite largely among civilized peoples to the general sum of happiness.

This general fact of the pleasure of organic function in all its modes of manifestation whether for the ends of the individual or the race, appears to be wholly at variance with pessimism which teaches that there is necessarily more pain than pleasure in existence. But if the greater pleasure of function adds to the proportion of the buoyant and happy, and if the organic experience which invigorates is pleasurable, and that which enfeebles usually painful, all this goes to the support of optimism, in that it indicates a great preponderance of pleasure over pain. But at the same time it gives no support to the optimistic fancy than pain is incidental and destined to be outgrown. Any suspicion that it points to the negative and incidental character of discord and pain must quite disappear as groundless, under a further consideration of facts which relate to organic life.

SECTION 164.—There are a number of stimulants attended with the pleasures of sense in the taking, but which are liable to injure, and even to destroy the organism. Alcohol, tobacco, opium, hashish, chloral, tea, and others partake more or less of this character. It may be that some of them, when taken in moderation, illustrate the law that what invigorates gives pleasure; but what is fatal to the application of the law in such cases, is that the pleasure of taking tempts to pass the bounds of moderation, and ruin follows in the wake of excess. Animals generally avoid deleterious plants, but sometimes even they err, and misled by their tastes, partake too freely of what proves destructive even of life. And when this is the case, when death supervenes upon use, it is not possible for an instinct against its use to be organized in the race on the principle of

heredity. And in regard to man, the adverse experience connected with the abuse of narcotic stimulants, seems to profit the race but little; and the seductive pleasure accompanying their use proves to be too strong a temptation for the remonstrances of reason. A tonic stimulant like quinine may be offensive to the taste, though it is strengthening; while a poison may be pleasant to the palate, but fatal to the system, so, the general fact that what invigorates is pleasurable, and what enfeebles disagreeable, has exceptions in which pleasure leads to ruin, while the painful is conservative;—and optimism is at fault.

But there is still another class of facts to be considered in this connection which is more fatally opposed to the optimistic view of the transient nature of evil.

SECTION 165.—While life could not be maintained if its primary functions were not pleasurable rather than painful, yet is it a well-founded conviction that pleasure is debilitating, and hardship invigorating. This is, of course, a somewhat different sense of the word pleasure, having reference to its too great prevalence to the perversion of function. Nor is the word hardship synonymous with pain, since it has reference more especially to feelings in connection with the indirect functions of life. Pleasure beyond certain limits is debilitating, and hardship within certain limits is invigorating; organic experience which is invigorating, is also pleasurable, while organic experience which is debilitating, is painful. These are physiological paradoxes, every whit true in their proper place; and without due recognition of them, we should not understand life.

The taking of food is pleasurable, so much so that in some animals it appears to be attended with an enjoyment amounting almost to ecstasy; but beyond the limits of satiety it becomes painful. The procuring of food, however, a more indirect function of life, is less marked in its emotional characteristics. Under certain circumstances it may be pleasurable, but it is very liable to be attended with pain. When food is scarce, even animals in a state of nature are compelled to undergo hardships in order to procure the needful supply,—unrewarded watching

and fatiguing hunts, suffering at the same time from the pangs of hunger, and weakened by protracted fasting. But it is with man that we are more especially concerned. Since the very beginning of his existence man's chief concern has been for a sufficient supply of food. And in a general way, this supply has only been procured at the expense of pleasure and ease. The fatigue and danger of hunting, together with its uncertainties; the exposure and hard labor of agricultural life in early times; the unhealthiness and repulsiveness of a large portion of the necessary occupations of civilized life, all testify to the necessary hardships of procuring sustenance. There is of course a certain pleasure in labor, or rather in certain kinds of labor. One form of its pleasure is negative, inasmuch as it gives relief from *ennui*; but the mere sense of doing is accompanied with a positive pleasure which most people feel. Even if originally and essentially repugnant, generations of habit would necessarily have some result in allying pleasure with work. But doubtless this form of pleasure is mainly or wholly derived by association from what is gained by labor, and belongs properly to its results rather than to the labor itself. Little work would be done but for the necessities which make it compulsory. As Adam Smith puts it, the laborer "always lays down " a "portion of his ease, his liberty, and his happiness." And he further affirms that, "In every profession, the exertion of the greater part of those who exercise it, is always in proportion to the necessity they are under of making that exertion." In answer to the question, "Why does the laborer work?" Francis A. Walker replies, "Clearly that he may eat. If he may eat without it, he will not work." Amasa Walker declares that "man's work is man's want active," and that, "Labor is always irksome. This is the law. Men do not voluntarily put forth their exertions, except for a reward." But it is not necessary to quote authorities in support of this view; every man's experience confirms it, if not engaged in merely artistic work which is not properly expressed by the word labor.

Life then is far from depending wholly on what is pleasurable;

but mankind choose to undergo the hardships of labor and self-denial rather than let life go by default. The like is true of the animal races; the stimulus of hunger impels them to exertion, be it ever so painful, to allay the still greater pain of hunger. Man is more calculating. He knows without personal experience that hunger, emaciation, exquisite torture are only kept in abeyance by an adequate supply of food. Everything in life depends on this supply. Hence, primarily, it is a choice between evils, that of starvation on the one hand, and that of overcoming repugnance for such supply on the other. But since a sufficiency of food is the *sine qua non* of all the enjoyments of life, the pains of securing the supply are endured with equanimity, as the inevitable price of the enjoyment.

SECTION 166.—There are several points of especial interest to be noted here. First, it is to these very hardships which living necessitates that man owes his vigor of constitution. "Difficulties strengthen the mind as labor strengthens the body."—(Seneca). In genial climates where the means of life are to be had with little exertion, and where the climate itself is unfavorable to exertion, man is feebler in both mind and body than in regions where it is necessary to put forth exertion. The hardiest peoples have grown up in temperate climates, where the rigor of winter alternates with the warmth of summer, and industry is indispensable to the adequate supply of food and shelter. Too much hardship like too much indolence enfeebles, as the condition of arctic and tropical peoples proves.

Secondly: To exertion thus put forth under the stimulus of want, is man indebted, not only for vigor of body and health of mind, but for development of mind as well. If he were not compelled to devise ways and means, and to exert himself in carrying them out, he would everywhere be a feeble and stolid creature; and habits of mental torpitude would prevent the development of his mental faculties. Under mere pleasure-seeking and the indulgence of ease, the mind becomes listless as the muscles become flabby. Use, exercise is indispensable not only to prevent degeneracy, but to promote the still further

development of mind. The birth of new powers constituting evolution comes only through the pains of labor. The testimony of Herbert Spencer on this point is explicit. He declares that if it were not for the necessity of contrivance and exertion which the struggle of life entails, "growth of mental power would not take place. Difficulty in getting a living is alike the incentive to a higher education of children, and to a more intense and long-continued application in adults. In the mother it induces foresight, economy, and skilful housekeeping; in the father, laborious days and constant self-denial. Nothing but necessity could make men submit to this discipline; and nothing but this discipline could produce a continued progression."—(Biology, II., 499).

Beyond this, thirdly, there is still another result: But for this necessary exertion there could be no social development. Through the labor of invigorated muscles in connection with the devices of improved intellect comes the supply of food necessary for the increase of numbers; and this increase of numbers renders possible and necessary the higher form of society which we know as civilization. Then, the resistance overcome, the hardship endured in procuring food for sustenance, and clothing and habitations for protection against the vicissitudes of climate, are the necessary conditions of all that is great in the history of man. They have invigorated the body, developed the intellect, and brought civilization into existence. What was pronounced on Adam and Eve as a curse is found to be the condition of all human good. Under the necessary constitution of things, without the inconveniences and hardships, the good could not have been. This is neither optimism nor pessimism.

A query very naturally suggests itself here: If the highest that we observe in man has been achieved only through the labor of overcoming resistance, is this to be the order of things for all time to come? Or is there to be a condition of things when life will be wholly pleasurable, or, as Spencer puts it, when there will be equilibrium between man and his environment? And if life should become wholly pleasurable, what would be its

effects on man? If the law of development has been throughout all man's previous existence, that he could only maintain his vigor of mind and body by the exertion necessary to overcome difficulties, will not degeneracy immediately supervene when there are no more difficulties to encounter?

SECTION 167.—Since the above was written Spencer's Data of Ethics has been published. In this work the transformation of repugnant duties into pleasures by the necessary and natural action of the forces of evolution is insisted upon with optimistic emphasis. The author believes that "the re-molding of human nature into fitness for the requirements of social life, must eventually make all needful activities pleasurable." The canons of political economy are to be reversed, and work heretofore deemed repugnant is to become attractive. Men will no longer work because they must, but because they love to work, if, indeed, on that happy day it will be regarded as work. Such an idea does away with the essential meaning of labor and all its connotations. It is a sort of *a priori* dream proceeding from the fragrant atmosphere of the artistic studio; and not from the dingy mine, the scorching field, the routine shop. One whose ancestors have always had to labor, year in and year out in order to live, and who is now compelled, himself, to follow in their footsteps, and who after weary years of toil, realizes how little the persistency of the habit has done to turn work into pleasure, could not indulge this *a priori* dream, except by contrast. His estimate of the essential character of work is *a posteriori*; and in his visions of the future, work is still repugnance overcome, and the good it brings is bought with a price which must be paid. In economics the price is given as the equivalent for use. As in chemistry, hydrogen is H-H, and oxygen O-O, so in sociology is *living* coupled with labor, L-L, and *wants* supplied inevitably linked with *work* done, W-W; and neither term can exist alone, each being the counterpart of its fellow, and their union necessary to integrity.

A consideration in behalf of the claims of labor for reward is that it is repugnance overcome. It is admitted that whoever

practices the self-denial which work and business require, should receive fitting reward for such self-denial. This idea lies at the basis of all industrial virtue. If labor and business are to become unmixed pleasure, the fundamental principles, not only of all economy, but of all thought and feeling in relation to life, will be overturned. "There is nothing gratuitous in physical nature," says Tyndall, "no gain without equivalent expenditure." Precisely the same is true in the moral world. This law has shaped the very being of man, and all that he has ever gained he has paid well for ; and it is forever true that every pleasure has its price. And if it is not paid for in advance in the legal tender of nature, the inevitable mortgage is sure to be foreclosed at last, and the victim learns too late that what he thought clear gain has made him a moral bankrupt.

The idea that all necessary work may be pleasurable like rowing or the chase, seems to overlook cardinal principles, not only in man, but in nature, of which man is a part. We may judge something of the pleasurable character of action in relation to what man always has been, by what in former times the "lords" chose to do themselves, and what they made their slaves and their women do. They hunted and went to war, and made their slaves do the work. So Indians and savages generally pursue the chase and make their women attend to the drudgeries of life. Games of skill, speed, and strength, the chase, battle, all involve the conflict-element in a lively sense, and answer to one of the most fundamental proclivities of the human constitution, while tame, drudging labor does nothing of the kind. The boy who thinks it a cross to hoe corn or potatoes will beg for the privilege of riding a colt even at the peril of his neck and with far greater exertion than the despised labor requires. The wilder the animal the greater the zest of bringing him into subjection. It has a great advantage in interest over humdrum labor. It gratifies the deep-seated love of conquest with the glory of victory—a passion which is older even than man.

The claim of pleasure for the necessary labors of the future,

involves mental conditions which are nothing less than psychological degeneracy. Imagine the future man delighted with the monotonous industries which civilization has engendered, and which it will doubtless engender still more through invention and the division of labor! A refined being happy while he clears away accumulations of filth, mines the coal and metals, cultivates cotton under a southern sun, works in the heat of the furnace, or stands faithfully at his monotonous duty in the mill! It is "inconceivable," and therefore to be condemned by Mr. Spencer's own ultimate test of truth!

The division of labor which is still going on is fatal to the notion of its future pleasurableness. A peculiarity of industrial tendency is that while it is developing multiplicity and diversity for the race, it is developing monotony and weariness for the individual laborer. The efficiency of modern industry requires this sacrifice of the individual's tastes for diversity and change. The antithesis and paradox of the situation are well hit off in few words by Amasa Walker: "By the division of labor the independence of each is sacrificed to the good of all." Professor Luthard, of Germany, testifies: "Work is specialized and therefore degraded, so that men cannot be complete in their vocation, but seek compensation in sensuous enjoyment, and the statistics of crimes of animal indulgence have rapidly increased." Roscher, the German economist, exclaims: "What must be the aspect of the soul of a workman who, for forty years, has done nothing but watch the moment when silver has reached the degree of fusion which precedes vaporization! who is blind to all else, but receives a good fat salary for his services?" Schliermacher rightly declared "all human action which is purely mechanical, through which man becomes a living tool (slave) immoral. . . . The morality of a profession may be measured by the degree in which it corresponds with the universal calling of the race. . . . There is nothing more ruinous than premature, one-sided education in a single trade or profession."

But let us admit that the future man will be healthy, and

pleased, and happy in the discharge of such industrial functions as civilization is multiplying: then, what kind of a creature must he be? So completely transformed that we can no longer consider him as hopefully human. To receive pleasure from such labors on their own account would imply on the part of the laborer a stolid simplicity of mind bordering upon idiocy. Such emotional reversion could only take place by curtailing man's higher traits of character; and if the habit of performing this kind of work can only become pleasing through the atrophy of the best elements of manhood, it may be well if the repugnance of labor cannot be transformed into agreeableness. It may be even better that it shall become more repugnant through the necessary degeneracy of labor by division, and the more general moral improvement, if possible, of the laborers. And while it is probably true that labor must always be repugnant, we believe it is better that mankind shall settle down into the conviction that all the good things of life have their price, and that the more there are of these good things the greater the purchase money that must be given. Labor is the necessary means to ends, and in its very repugnance it is the cause of incidental and far reaching good. In its compensation it is linked with the hope of emotional reward, and there is no reason, when the sacrifice is not too great, why it should not be performed with nerve and a reasonable degree of cheerfulness.

Fourier has not left this subject so fully in the glitter of optimistic generalities, but comes with it courageously to the perilous ground of detail. He would make labor pleasurable by turning it into play through the fascination of sociability and change; but the answer to this is its impracticability, more clearly to be seen now in the light of modern industries than when Fourier wrote. Fourier's Phalanstery like Plato's Republic belongs to the region of the ideal. Spencer's transformation of labor into pleasure belongs to the same category.

CHAPTER XXIV.

MAN'S ENVIRONMENT—GEOLOGICAL CONDITIONS.

SECTION 168.—On the nebular hypothesis, if true, there was geological conflict as soon as the cooling of the earth had advanced sufficiently for the formation of water and of a solid crust above water with a shore-line. Then began the war of the land and the sea which has been so prolific of results in the history of our planet. There has been a ceaseless conflict of the elements on the land and under it, in the waters, and in the atmosphere ; and this many-sided conflict still persists.

On the land, water in the forms of rain, springs, torrents, rivers, currents, tides, snow, ice, is working to one result ; while the internal fires of the earth in the forms of volcanoes, earthquakes, and the subsidence and elevation of continental tracts are working to the opposite result. The unopposed action of the aqueous forces would reduce the surface of the earth to a dead level by wearing away the higher portions and filling up the lower ; but the constant action of volcanic forces preserves the inequalities of the earth's surface by raising it in one place and sinking it in another.

The great carriers of sedimentary spoils from the higher to lower places are the rivers. The area of the delta at the mouths of the Ganges and Brahmapootra is two hundred and fifty miles in length by eighty miles in width. Beyond this the sediment is carried far out into the bay and thrown down on an area reckoned to be three hundred miles east and west and one hundred and fifty miles north and south. The entire area, therefore, over which these two rivers are spreading their freight of

sediment is sixty-five thousand square miles. It is estimated that these two rivers carry down annually about forty billion cubic feet of sediment. This is five hundred and thirty-three times the bulk of the great pyramid of Egypt, which covers eleven acres and is five hundred feet high. It would make a range of hills the size of this pyramid and set base to base more than one hundred and thirty-three miles long. And supposing that the sediment transported by these two rivers is five per cent. of that which is transported by all the rivers of the world, then would the aggregate of the sediment thus annually delivered be equal to a range of such hills more than two thousand six hundred and sixty miles in length equal to a quadruple range extending from the city of Washington to New Brunswick.

The action of large bodies of water in the form of waves, tides, and currents, assists the rivers in their work of wearing away the continents. While they are eating away the shore at almost all points, they also take the fine sediment brought down by the rivers, and carry it far out into the deeper waters. Opposite the mouths of the rivers already named, at high water, the bay is turbid at the surface more than sixty miles from the shore. M. Agassiz believed that a breadth of three hundred miles has been torn from the land at the mouth of the Amazon. It is estimated that the Alleghany mountains retain not more than half the bulk they once had, the rest having been swept to lower levels and carried to the bottom of the sea (Dana). All the older mountains of the earth have disappeared from this cause; only those remain which had their origin in comparatively recent geological times (Judd). Not only mountains are going, but valleys as well. It is estimated that over a large part of the Mississippi valley, the surface looses by erosion as much as a foot in a century (Shaler). "Speaking in general terms, we may say that the entire mass constituting all the mountains and continents, of a mean elevation of one thousand feet above the level of the sea, has been diminished by an amount of material sufficient to fill up an abyss six times the depth of the ocean."—(Prof. George Pilar, Smithsonian Report, 1876, p. 305). Accord-

ing to the calculations of Croll, the whole American continent would be worn down to the level of the sea in about four millions years at the present rate of denudation, if there were no continental elevations to counteract the effect. It was the opinion of Herschel that if the earth had begun in its present form, the levelling forces would have put all the dry land under water long ago. Judd (*Volcanoes*, 287) affirms it to be a "well established fact that the denuding forces ever at work upon the earth's surface would have been competent to the removal of existing continents many times over, in the vast periods covered by geological records."

The effect of rivers, tides, and currents, does not in all instances cause a loss to the dry land equal to the sediment they remove. By the silting up of shallows and the formation of deltas, the area of land is, in many localities, gaining on that of the water. At the mouth of the Po the land is gaining on the gulf at the rate of one mile in a century; and at the mouth of the Nile, the delta has probably pushed itself one hundred miles into the Mediterranean, with a base of two hundred miles, while at the same time the bed of the river is rising and its flood waters extending over a wider area, in consequence of which the alluvial soil is encroaching on the desert. Rivers which once emptied by different mouths have become united through the constant accession to the land which they have themselves effected. The Po and the Adige, the Ganges and the Brahmapootra, the Red River and the Mississippi, the Tigris and the Euphrates, are given as examples. To the general effect of reducing the area of dry land, the levelling tendencies of the water have, therefore, the counter effect of adding to the area of dry land; but this is to be regarded as an indirect result which the denuding agencies, if not counteracted, would eventually overcome.

Thus, while the countless streams all over the earth, together with the waves, tides, and currents of the great bodies of water are bringing about the ruin of the existing world, these self-same streams and the rains which feed them are necessary to the

existence of life on the planet. The means of present life are the means of ultimate destruction. The aqueous agency which makes organic existence possible on the dry land, if not met by counter agencies, would, in the end, destroy the physical conditions of organic life. The aqueous conditions of life on land are thus destructive of the land-conditions of life. The agency is self-negating as regards the existence of higher forms, and if not prevented by a counteracting force, it would defeat its own utility.

SECTION 169.—Volcanoes bring matter up from the interior of the earth and throw it on the surface. In an eruption of Scaptor Jokul, Iceland, in 1783, the volume of matter thrown to the surface was greater than the whole of Mt. Blanc. Even twice as great as this, it has been estimated, is the volume of scoriæ and ashes thrown in 1815 from a volcano in the Island of Sumbawa. By this force have mountains and vast tracts of country been permanently elevated. In 1759, on the plain of Malpais, in Mexico, six volcanic peaks were formed, the lowest of which is three hundred feet, and the highest sixteen hundred feet, above the original surface. An extent of country in Chili, more than twice the area of the State of Ohio, was lifted up several feet during the earthquake of 1822—a mass of matter greater than that which is carried to the sea in ten years by all the rivers of the earth. Islands have been permanently formed in this way several hundred feet above the surface. Most oceanic islands are formed of volcanic rocks. Mountain ranges are the product of two opposing forces, the volcanic which lifts up and the aqueous which wears down and carries away. The aqueous agencies are the sculptors of the mountains as well as of the earth's surface in general.

Earthquakes cause depressions as well as elevations. During the earthquakes along the Mississippi in 1811-'12, a tract of country eighty miles in length by thirty miles in breadth was depressed several feet. During the earthquake of Jamaica, in 1692, the buildings in the harbor sunk fifty feet. In the earthquake of Calabria, the quay of Messina sank below the surface of

the water; while in that of Lisbon, 1775, the new marble quay sank into the water more than a hundred fathoms.

Besides the changes of level produced by volcanoes and the shock of earthquakes, there are elevations and subsidences of extensive tracts slowly and insensibly taking place. There is evidence of the gradual elevation of the Andes, "beginning with times antecedent to the deposition of the oolitic and cretaceous formation of Chili, and continuing to the historical epoch. It appears that some of the parallel ridges which compose the Cordilleras, instead of being contemporaneous, were successively and slowly upheaved at widely different epochs. The whole range after twice subsiding some thousands of feet, was brought up again by a slow movement in mass during the era of the Eocene tertiary formations, after which the whole sank down once more several hundred feet, to be again lifted to its present level by a slow and often interrupted movement."—(Lyell's *Prin.*, 170, on authority of Darwin). These evidences of alternate elevation and subsidence of immense tracts of country, many times repeated in the remote past, are constantly coming to light in the course of recent investigations, as shown by the later reports of our own State geological surveys. In our own times certain archipelagoes in the Pacific, also Scandinavia embracing thousands of square miles, are subject to gradual upheaval. The shore at North Cape is rising at the rate of about five feet in a century. Greenland, the shores of Germany, the islands of Denmark and Norway, and a part of the coral islands in the Pacific and Indian oceans are as certainly subject to gradual subsidence. Candia has risen at the west end, and sunk at the east end till the houses may be seen under water. The eastern shore of North America from Labrador to Delaware, and in less degree even as far as Florida, has been slowly sinking for hundreds of years. "Exact observation has proved that almost every part of the earth's surface is either rising or falling."—(Judd).

Where the area of dry land would be extended at the mouths of great rivers, it is prevented in some instances from doing so,

not only by the action of the waves, but by constant subsidence. The delta deposits at the mouths of the Po and the Ganges are several hundred feet deep, and the character of the strata composing them, as revealed by the artesian auger, proves that portions once at the surface are now several hundred feet below. The delta of the Indus sank several feet during the earthquake of 1819, and two thousand square miles of low land was submerged. In such cases the subterranean force co-operates with the waves against the action of streams forming deltas, to reduce the area of land above the level of the sea. But where, instead of sinking, the action is an elevating one, as in the north of Europe and on the coast of Chili, the sediment thrown down by the rivers in the shallow waters near the shore goes to extend the area of dry land.

With regard to keeping good the quantity of dry land, elevation or subsidence has precisely opposite effects in the event of taking place under the land or under the water. Subsidence under the ocean is equivalent to a rise in the land; and upheaval, if not offset by depression elsewhere under the water, would be equivalent to a subsidence of the land. Subsidence of the bottom of the ocean and elevation of the land along shore co-operate to increase the area of dry land, while elevation of the bottom of the ocean and the sinking of islands or continental tracts, diminish it.

Owing to the co-operation of these forces,—the denudation of the land and its transportation to the sea, the action of waves on the shore,—and the elevation and subsidence of tracts of the earth's surface, sea and land in many or all of those tracts have many times changed places. And some of these agencies may have been more powerful and attended with greater violence in times past than at present. If it be true, for example, that the tides were immensely greater in early geological ages than at present, owing to the greater proximity of the moon (Ball, *Popular Science Monthly*, February, 1882), it follows that the rapidity with which the destruction of continents and the accumulation of sediment at the bottom of the ocean were then going on, is

entirely beyond the estimates which are based on the present action of these agencies. But they are still very active and capable of great results. Charles Darwin has observed that, "Daily is it forced home on the mind of the geologist that nothing, not even the wind that blows, is so unstable as the crust of the earth."

SECTION 170.—Not only is the water system of the earth, from the ocean which supplies the vapor to the clouds which distil it in rain, necessary, on existing soil, to the higher orders of life, but the soil itself owes its existence originally to this same water system. If it were not for the moisture which exists in the atmosphere as vapor and falls as rain, to permeate the pores of the rocks, freezing and thawing would not disintegrate these solid masses and change them into soil. But without the lifting forces there would have been no rocks to disintegrate, and without the continuance of upheaval, the soil formed by aqueous agencies would be carried by the same agencies and thrown into the sea; consequently, the antagonism of the aqueous and igneous forces co-operating to the same end, is absolutely necessary to the habitable condition of the earth. But this good cannot come about without accompanying evil.

The rains could not descend, nor the ice and snow melt, the streams could not collect and descend from the mountains into the plains, without incidental violence and destruction. And subterranean forces equal to the lifting of continents cannot act without terrific violence, and destruction of life, and often of the labor of ages. Cities have been shaken down and covered up with hot ashes and burning lava. Populous neighborhoods, beautiful countries have been desolated; and from first to last every living form has been made to suffer,—the fishes in the seas and rivers, the birds and beasts of the forests, domesticated animals, and man, savage and civilized. The ruin from floods may have been less terrific, but hardly less extensive; and when earthquake-shock and sea combine to overwhelm the shore with an immense wave, hundreds of thousands sometimes perish in a moment.

The same agencies which do the good and make earth habitable, do the mischief and torture the inhabitants. If we have the good, if we have sentient existence at all, there is no getting rid of the evil except by perpetual miracle. So far as we can see, judging from the past and present, if the earth is to continue habitable for the higher classes of beings, these violent forces will continue to mix their evil with their good. Their good and evil are "united from one head,"—so often do the phenomena of nature remind us of Plato's conception of pleasure and pain.

Constant change is impressed on the face of the planet—change incessantly promoted by these conflicting forces—change as the result of indispensable activities—change which man himself is doing much to complicate; therefore, must change constantly take place in the inhabitants of the planet to adapt them to the ever-changing conditions of life; and this change can only take place by the excision of the inflexible which refuses to conform to the requirements of adaptation. Through this ordeal more or less painful, higher organization with keener enjoyment may come hereafter than ever before, but there is no paradise on earth for mankind, since the physical conditions of life are dependent on forces which cannot be rid of essential violence and its necessary accompaniment of pain. According to this view of geological conflict, extreme optimism is at fault, while at the same time pessimism is not necessarily sustained. The good obviously far outweighs the evil. This appears to be true even in the districts most exposed to catastrophe, if the deliberate acts of multitudes of people are to be accepted as evidence of their preferences.

The case of Torre del Greco, situated on the flank of Mt. Vesuvius, is to the point. The world is still roomy, and if all the country within a hundred miles of the volcano were sunk into the sea, and the inhabitants saved, they could find plenty of places elsewhere for homes. But the flanks of the mountain are very fertile, and people choose to live in the dangerous vicinity of the volcano. Streams of lava have frequently run through

the streets of Torre del Greco, and a part of the city has been incrustcd in solid rock. At one time four hundred people were destroyed, at another three thousand, yet the lava is quarried to erect new buildings on the site of the old, and fifteen thousand people persist in making their homes here. But this is no marvel; it is a common-place of habit and hope. If man be a part of nature there may be fascination for him even in the imminence of the terrible. Man finds within himself the counterpart to the conflict which rages in the external world around him; and possibly such are the paradoxes of existence, if it were not for the chances of suffering from physical evils which threaten him, he would be less happy than he is. It may be a compensation for necessary evil that by contrast it gives him additional zest for the good he may strive to win.

SECTION 171.—Thomas Burnet lived too early to profit by a geological education. He was opposed to a planet with a rough face on it. His two volumes on the Sacred Theory of the Earth was "writ with a sincere intention to justify the doctrines of the universal deluge, and a paradisiacal state, and protect them from the cavils of those that are no well-wishers to sacred history." He deposes "that the face of the earth before the deluge was smooth, regular, and uniform; without mountains and without a sea." "In this smooth earth were the first scenes of the world, and the first generations of mankind; it had the beauty of youth and blooming nature, fresh and fruitful, and not a wrinkle, scar, or fracture in all its body; no rocks nor mountains, no hollow caves, nor gaping channels, but even and uniform all over. And the smoothness of the earth made the face of the heavens so too; the air was calm and serene; none of those tumultuary motions and conflicts of vapors, which the mountains and the winds cause in ours; 'twas suited to a golden age, and to the first innocency of nature."—(Vol. I., pp. 72, 89). Such a world would be a perpetual miracle; but of course no "well-disposed" critic would have urged this against the sacred theory of the earth in view of the author's excellent intentions. Theologians have long taught the doctrine which Dr. Thomas Dick allied with his

popular expositions of science, that the earth had become a theater of violence in consequence of man's fallen condition. Burnet thought it all right till the flood came and tore it up. John Wesley, who was at a loss to find use for earthquakes and volcanoes in the economy of nature, attributed to them the moral purpose of impressing man with a proper sense of God's power; and the Rev. Gisborne evinced wonderful keenness of insight in regarding earthquakes as the divine means of vindictive justice!

However well meant, these theological explanations of the difficulties concerning the physical discordances of our planet cannot be regarded as altogether happy; the scientific is far more satisfactory. Lyell states it in this way, "That the constant repair of the land and the subserviency of our planet to the support of terrestrial as well as aquatic species are secured by the elevating and depressing power of causes acting in the interior of the earth; which although so often the source of death and terror to the inhabitants of the globe, visiting in succession every zone, and filling the earth with monuments of ruin and disorder, are nevertheless the agents of a conservative principle above all others essential to the stability of the system."—(Prin. 565).

CHAPTER XXV.

MAN'S ENVIRONMENT—ATMOSPHERIC AND OCEANIC CURRENTS.

SECTION 172.—The conditions of antagonism which prevail among the elements of air and ocean are so manifestly identical with the conditions of life that their study in this connection is full of significance.

The Gulf stream has long been the vexed theme of scientific inquiry and hypothesis; and it is still far from being understood. Indications of its origin may be found in the Atlantic east of the

Antilles, and thence through the Caribbean sea into the Gulf of Mexico, from which the Gulf stream proper issues. It passes around Florida, turns to the northward, keeping near the coast of the United States, to Newfoundland, whence it turns to the eastward, and crosses the Atlantic to the western coast of Europe, having sent a branch toward the coast of Africa, and further on sending another branch toward the coast of Greenland, the main stream proceeding northward to the Polar sea. The stream becomes slower, wider, and shallower as it proceeds. It stops far short of Europe as a distinctive stream, but the waters continue to drift on, and again reappear as a stream in the arctic regions. The water of the stream is warmer than that through which it flows; and its volume three thousand times greater than that of the Mississippi river. On account of its greater warmth it is the messenger of benignity wherever it goes; and by its genial influence on Western Europe it has made possible the course which modern civilization has taken. Mr. Croll has calculated that the waters of the North Atlantic would be several degrees below freezing were it not for the Gulf stream; but it has its evil genius; storms love to follow it, and rage along its course.

There is a current along the western shore of Africa to the equator, and thence westward across the Atlantic to Cape St. Roque, where it separates, one branch following the coast line southwardly, the other following it northwardly toward the Caribbean sea. It is believed that the waters of the Atlantic have a circular motion to the northward along our shore, thence eastward to Europe, thence southward along the coast of Africa to the equator; thence westward to South America, thence northward to the Gulf of Mexico. It is said to keep in motion one-fourth of all the water of the Atlantic. Within this grand circle of movement is what is called the Saragossa sea, where the waters are still and covered with seaweed.

There is a current of cold water which has been traced from Spitzbergen within 10° of the North Pole, thence to the coast of Greenland and along it to its southern extremity around which

it curves, running northward into Davis' strait; thence turning to the southwestward it proceeds to the coast of Labrador, and having united with the polar current from Baffin's bay, being now fifty French miles in width, it reaches the east coast of Newfoundland, where it separates into two branches. The eastern branch passes under the Gulf stream and pursues its course across the Atlantic to the African coast, while the western branch continues as a counter current alongside the Gulf stream and between it and the United States coast as far as to Florida. Eastward from Iceland a polar current passes under the Gulf stream. Near Bear island, another from the northeast meets the Gulf stream and divides it into two or three channels. This interference of the counter cold streams from the north is greatest during the summer months. The polar currents are greatly reduced during the winter season, while the Gulf stream is then stronger than in summer (Petermann).

There is a surface current through Behring's strait into the Arctic ocean. Humboldt's current sets northward along the coast of Peru. There is a surface current into the Mediterranean and an under current outward. The same is true of the Red sea and of most or all inland bodies of water which have direct communication with the ocean. The Indian ocean has its currents and counter currents. The Chinese current, with another of cold water flowing between it and the coast of China, is in this as in other respects, quite like our Gulf stream. Captain Grant crossed a current setting southward from the Cape of Good Hope, which was sixteen hundred miles across and 23° warmer in the middle than at the edges.

Besides surface currents there are numerous under currents of which, however, less is known. They often exist as counter currents immediately beneath those which run on the surface. Icebergs with tops high above the surface have been seen cutting and tearing their way northward through a sheet of ice or against surface currents setting in the opposite direction. They were probably carried along by a powerful under current. Captain

Wilkes crossed a hyperborean current at the equator two hundred miles in width.

All this movement and counter movement of the waters of our globe are so vast and complicated that they cannot be here presented even in outline. There is, no doubt, a general interchange of the warmer waters of the South with the cooler waters of the North, the former passing mostly over the surface, the latter generally moving in sheets or currents along lower levels. The general exchange of waters between the equator and the poles mitigates the heat of tropical climates, while it prevents a greater accumulation of ice at the poles, and with it the greater encroachment of perpetual winter on habitable parallels. It is the great equalizer of temperature and climate. If there were no exchange of waters between the equator and the poles, the difference of temperature would be 210° ; with such exchange as now takes place, the difference is only 80° . Without the equalization of temperature by the counter movement of the waters between the torrid and frigid zones, the earth would not be habitable for such beings as now exist upon it (Croll).

The general conception of oceanic circulation must be that it is a counter and compensating movement which affords a magnificent example of that antagonistic tendency of action, which all forms of phenomena are certain to assume, one way or another.

SECTION 173.—The winds, fitful as they seem, are yet subject to laws, and so regular, that wind charts are made for the use of mariners. Seamen are well advised as to the general course of the winds and the locality of the belts of calms. The currents of the atmosphere like the currents of the ocean constitute a complete system of counter and compensating movement. The trade winds blow from the calm belts near the tropics toward the northwest and southwest till they meet in the calm belt near the equator. Here, having accumulated their maximum of heat and become light, they rise, pass each other, and as upper currents continue toward the southeast in the southern hemisphere, and toward the northeast in the northern hemisphere, till they reach

the calm belts near the tropics, where they descend and pass as surface currents toward either pole. For every current beneath there is a counter current above.

Monsoons sometimes deflect and even reverse the course of the trade winds; but only through a more powerful action of the same cause which produces the trades themselves. When the atmosphere of any region becomes very much more heated than that of the contiguous regions, the heated and expanded air must rise, and surface currents from the surrounding atmosphere must set toward the ascending column. The heating up of the deserts of central Asia causes the monsoons of the Indian ocean which blow during a part of the year in that direction. The southeast trade winds of this ocean pass gradually into the southwest monsoons which set toward the deserts in the interior of Asia; the influence of the heated desert during a part of the year having in this case deflected the course of the southeast trades, and reversed the usual direction of the winds between the equator and the tropic of Cancer.

The deserts of Africa in like manner cause a vast column of heated air to ascend; hence, the monsoons in the Atlantic on the coast of Africa. The monsoons of the Gulf of Mexico and of the Pacific along the coast of Central America are caused by the heated plains of Mexico and Utah. The influence of heated deserts on the course of the winds is felt a great way off. The wind currents of the Indian ocean are affected by the desert of Cobi and the scorching plains of Asia, one thousand miles distant. It is shown that the atmosphere of Austria and other parts of Europe, is affected by the deserts of Arabia.

The land and sea breezes along the shore of large bodies of water are due to the variable temperature of the land, heating by day and cooling by night, while the temperature of the water remains quite uniform, receiving and losing heat more slowly. For the same reason the influence of islands on the atmospheric currents is very considerable. The unevenness of the earth's surface, its mountains, valleys, and plains, also the irregular dis-

tribution of land and sea, are all sources of disturbance in the general wind-system of the world.

SECTION 174.—While we cannot contemplate the oceanic and atmospheric circulations without being impressed with the feature of counter and compensating movement, may we not find in their causes the like features of contrast? The philosophers are not agreed concerning the cause of ocean-currents. But so far as our purpose is concerned, it matters not whether the various modifications of the gravitation theory held by Maury, Colding, Carpenter be true, or the wind theory advocated by Professor Zoppritz, by James Croll, and by Petermann. They all refer oceanic circulation to the same ultimate source. Gravity could not act to produce currents did not the action of heat produce inequalities in the weight and depth of the oceanic waters. And, if the wind be the cause of such ocean-currents, heat is equally indispensable for the production of the necessary propelling currents in the atmosphere. The sun is the prime mover in either case, and must act in connection with gravity to produce the currents in question. From the sun proceeds the expansive energy which produces inequality, while gravity is as constantly at work to restore the equilibrium. Both the gravitation theory and the wind theory of ocean currents depend ultimately on the antagonistic action of gravity and heat. Then, if the wind theory be the true one, as appears probable, we are still dealing with antagonism. There can be no winds without the local differences of temperature and the constant action of gravity to restore the equilibrium thus disturbed; and hence, by their antithetical action, heat and gravity co-operate to set the currents of the atmosphere in motion, while these in turn set the currents of the sea in motion, to the benignant modification of climate.

SECTION 175.—In all this movement and counter-movement of “wind and wave,” there is necessarily much conflict and violence. In the mad war of waves men and their works have perished through all the ages. There are tides—due to the counter-action of the same force in the earth and moon;—there

are maelstroms—caused by the oblique meeting of currents;—there are water-spouts and what are called tide-rips, bores, eagres; and attendant on the action of all these is more or less violence. On the land we have fogs, thunder and lightning, storms, cyclones, tornadoes, gusts, floods—often sublime in power, but ruthless in destruction. And as calamity assumes terrific forms when the earth rocks a huge wave over the shore far into the land, so does it when the tornado meets the sea and goads it into fury.

Little do these destructive energies abate with the advance of science and civilization; but with equal violence they do more harm, since there are both more people and property to be destroyed. We may predict the storm without being able to shun it, for while we may turn aside the lightning, wind and flood must have their way.

Let us note in this connection that, in the northern hemisphere, which has more land than water and a greater diversity of climatic conditions, meteorological violence is more fitful and frequent than in the southern hemisphere where such conditions are less diversified. Yet this same geographical diversity and even the meteorological instability which accompanies it, are the conditions which most favor the development of sentient and intellectual life.

The variegated distribution of land and water; the inequalities of the earth's surface; the rotation of the earth on its axis (being the occasion of the alternation of action and rest so distinctly a feature of vital existence, and indeed of all development); the change of seasons; above all, the heating and life-giving power of the sun;—rid the earth of these, and while we have thereby rid it of the disturbance, violence, and destruction which they cause, we have at the same time rid it of the very conditions of life, and we should indeed have a very peaceful world—as peaceful as the Buddhist's Nirwana. The necessary conditions of life are necessarily conditions of discord and pain. The same play of the elements which brings us rain and makes life on earth possible, brings storms and floods. The pain which they inflict on man, is not the end certainly for which these clash-

ing elements of the environment exist, but if they act for man's behoof they must also inflict the injury; and they are as ineradicable and as unavoidable as if they were the essential part of the "plan."

Let it be stated that the great preponderance of rather agreeable experience among sentient creatures so obviously outweighs the suffering due to the discord in their conditions of life, that it is not necessary constantly to protest that the good outweighs the evil. This is plain enough without such reiteration.

CHAPTER XXVI.

MAN'S ENVIRONMENT—LIMITATIONS OF THE HABITABLE AREA.

SECTION 176.—The aqueous and igneous agencies of nature do not present the only examples of antagonistic action on the planet; there is antagonism of results growing out of the operations necessary to make the earth a human habitation. Man contributes, by the changes he brings about, to the geography and topography of the earth, to the building up and to the pulling down as well.

He clears off the forests and reduces the land to cultivation. He drains marshes and even lakes, he confines rivers to their beds, constructs immense walls for the protection of coasts, and pushes the seas back from the land by means of dikes and embankments. He underdrains the soil and thereby greatly increases its arability. He improves navigable rivers, compelling them to deepen their mouths for the passage of great ships, and he cuts new channels for commerce, some of them of geographical significance. The grading and paving of river banks,

the building of piers, the dredging of harbors,—these have been done in the interest of commerce. Streams have been directed upon marshes to fill them up by the precipitation of sediment, and render them arable. Man has planted forests where nature had none, and stocked with fish waters which had been destitute. Much has man done to fit the earth for the home of man, and where the beasts once roamed in the wilderness, there are now green fields, artistic landscapes, beautiful homes, thronged cities. A ditcher of more than usual intelligence for his class, once remarked, as he thrust his spade into the earth: "The world was only half made, and we have to do a dev'lish sight of hard work to finish the job." But the popular idea that man is doing nearly everything to improve and scarcely anything to injure, is an error.

While in many instances man is reclaiming waste lands, he is in others making lands waste; and it sometimes happens that the wild beasts avenge themselves for defeat by haunting the places wherein were once the luxuriant abodes of historical peoples.

SECTION 177.—The forest is the great conservator of the earth's surface in hilly and mountainous regions. It not only retains the soil in its place and thus antagonizes the degrading power of the waters, but it adds its accumulated stores of vegetable matter, abstracted from the air, to the surface, and thus antagonizes the degrading tendency of the waters in a more active sense. Such accumulations are indeed slow, but the billions of vegetable organisms steadily at work on hill and plain effect tangible results in the course of ages, thus co-operating with the igneous agencies in building up the land.

The innumerable roots which penetrate the soil hold it together, while the spongy and bibulous surface formed by decayed and undecayed leaves drink up the falling waters, which thus pass harmlessly away. All this is changed when the steeps are cleared of their timber and reduced to cultivation. There is no longer a conserving network of rootlets, the spongy coating of the soil has disappeared, the rains pass rapidly over the

surface and carry the soil with them in quantities so great that, after the lapse of a few generations, it is in many instances all swept away, and the substratum of rock laid bare. The rivers thus swollen to resistless floods tear away their banks, and carry them down to the sea. In many instances so large an aggregate of sediment swept from arable lands and thrown into the rivers, fills them up at their mouths and along their beds, till they overflow their banks and convert productive fields into pestilential swamps.

Extensive regions of country once fertile and populous have been thus rendered sterile and tenantless. Professor A. Geikie observes : "It must be owned that man, in most of his struggles with the world around him, has fought blindly for his own ultimate interests. His contest, successful for the moment, has too often led to sure and sad disaster. Stripping forests from hill and mountain, he has gained his immediate object in the possession of their abundant stores of timber ; but he has laid open the slopes to be burned by drought, or to be swept bare by rain. Countries once rich in beauty, plenteous in all that was needful for his support, are now burned and barren, or almost denuded of their soil."—(*P. S. Monthly*, Sept., 1879). Hon. George P. Marsh, in his work on *Man and Nature*, declares that, if the countries which mankind have ruined could be restored, "The thronging millions of Europe might still find room on the Eastern Continent, and the main current of emigration be turned towards the rising instead of the setting sun." He further observes : "There are parts of Asia Minor, of Northern Africa, of Greece, and even of Alpine Europe, where the operation of causes set in action by man has brought the face of the earth to a desolation almost as complete as that of the moon ; and though within that brief space of time which we call the historical period, they are known to have been covered with luxuriant woods, verdant pastures, and fertile meadows, they are now too far deteriorated to be reclaimable by man, nor can they become again fit for human use, except through great geological changes, or other mysterious influences, or agencies of which

we have no present knowledge, and over which we have no prospective control. The earth is fast becoming an unfit home for its noblest inhabitant and another era of equal human crime and human improvidence, and of like duration with that through which traces of that crime and that improvidence extend, would reduce it to such a condition of impoverished productiveness, of shattered surface, of climatic excess, as to threaten the depravation, barbarism, and perhaps even extinction of the species.”—(Man and Nature, 43, 44). Felix L. Oswald states that, “since the beginning of the sixteenth century the population of the four Mediterranean peninsulas has decreased more than fifty-five millions, and the value of their agricultural products by at least sixty per cent.” “Afghanistan, Persia, Mesopotamia, Syria, Asia Minor, Greece, Macedonia, the southern islands of the Mediterranean, and the whole of northern Africa from Cairo to the western extremity of Morocco—countries which were once blessed with abundance and a glorious climate—are now either absolute sand wastes or the abodes of perennial droughts, hunger and wretchedness; and wherever statistical records have been preserved, it is proved, beyond the possibility of a doubt, that their misfortune commenced with the disappearance of their arboreal vegetation.”—(North Am. Review, Jan., 1879).

If the reader has not heretofore given attention to this subject, these may seem to be extreme statements; yet they are hardly to be regarded as such, when we recollect that numerous rich countries and cities in the East, once flourishing are now desolate and in ruins, and only hamlets and barren regions in their place. There is now no wealth of production from the soil to feed so great a population as those cities once contained, nor to stimulate the commercial activity which built them up. Thus, we have the paradox that in fitting the earth to yield him sustenance, man has, in many instances, destroyed the very conditions of that sustenance; and in enlarging his home on earth, he has actually narrowed it. The desolation that has taken place may not all have been necessary. Under different management, regions

now barren might have retained their arability and their fitness for human habitation. But much of it in all probability, at least without concert of action, immense labor, and more care than man will take, has been inevitable, and much of the same thing is at this moment occurring, and much more of it will occur for a long time, if not for all time to come. When the steep hill or mountain sides are cleared off and put under cultivation, the constant waste of the surface soil by the washing of heavy rains can hardly be wholly prevented, even by terracing. Ruskin speaks of successful terracing in China, Borneo, and India, and becomes enthusiastic over the consequences of its adoption in the Italian Alps. Up to four thousand feet, he says it may be successfully applied. He declares: "The Alps might be one paradise of lovely pasture and avenued forest of chestnut and blossomed trees, with cascades docile and innocent as infants, laughing all summer long from crag to crag, and pool to pool, and the Adige and the Po, the Dora and the Ticino, no more defiled, no more alternating between fierce flood and venomous languor, but in calm, clear currents, bearing ships to every city, and health to every field of all that azure plain of Lombard Italy."—(Nature, I., 509.)

Some allowance must be made for artistic fancy. Much might no doubt be done by the terrace and by constant vigilance, but after all it will be found that, in such localities, there is still much of truth in the antithesis that the conditions of living are the conditions of destruction. But besides these steeps which might be largely conserved by terracing, there are gentle declivities and rolling lands which hardly admit of the terrace, yet if they are cultivated at all, there are no means at present known of preventing the loss, stealthy but certain, from the wash of heavy rains. Only the restoration of the forest could wholly save them. And then we must recollect that when lands are conserved by terrace or other means involving great expense, there must be a sufficient motive for the undertaking. This motive has only found place where population presses hard against the extreme limits of subsistence; and when this is the

case, the energy of improvement is sustained by the danger of starvation—a condition of things which is not utopian.

But the evil of denudation is not the only one attendant on clearing up the woodlands. Forests obstruct the winds and protect man, animal, and plant. They prevent evaporation, absorb the rains, and thus feed perennial springs and maintain the constancy of the streams below. The forests gone, the floods which follow damage the labors of man, and the dearth of water which follows is often with difficulty made adequate to the supply of civilized needs. Driving winds now unobstructed blast the winter vegetation, while frosts strike with more force, and it becomes more difficult to grow the fruits and grains as the country becomes cleared. The very means which man uses to obtain greater production from the earth, brings him trouble and renders production more precarious. And so far as we at present know, he cannot get the one without the other—cannot extend the harvests without rendering harvests more uncertain.

In most cases of desolation in consequence of clearing and cultivation, there is no record left of the progress of the ruin; we only know that regions once fertile and populous are now barren and without inhabitants. But there has been abundant opportunity to study the process of destruction in what has occurred within the last hundred years under the eyes of competent observers. The French Alps afford a striking instance. Statistical returns show the gradual destruction of arable lands and the gradual depopulation of entire provinces. The torrents wash away the farms, and the inhabitants are compelled to abandon the country. Within only a few years, thousands have been thus deprived of their homes and sent by stern necessity to find the means of subsistence elsewhere. In ten years, from 1842 to 1852, the department of the Lower Alps alone lost sixty-one thousand acres of arable land which “had been washed away or rendered worthless for cultivation by torrents and the abuses of pasturage. In five years, from

1851 to 1856, the several departments of the French Alps lost one hundred and three thousand inhabitants."—(Marsh).

SECTION 178.—People plant trees on their prairie farms, because it is quite an immediate personal interest to do so; they clear the timber from the hill sides with the same motive. The one does good, the other works destruction. If the personal motive co-operated with the general interest of the country now and for the great future, it would be the most natural thing in the world to promote that general interest; but where the individual motive does not so co-operate, it is quite impossible to have men pursue the better way. There is a vague confidence in what might be done, which takes no account of human possibilities and impossibilities. If for thousands of years past man has proceeded in a certain course on a certain principle, it is gratuitously assumed that all this may be abandoned, and human procedure directed by truly rational and artistic guides. If mankind have been short-sighted, looking only to immediate interests, and forgetful of the future calamities which the blind pursuit of immediate interests is very often sure to bring, it is nevertheless assumed that the better way—the reverse course—will be followed if it be only pointed out. But this overlooks the inflexibilities of human nature. England and France have for generations stood at the centre of the greatest civilization the world has ever seen, yet they have done little more to conserve their soil, perhaps, than did those countries in the East to conserve theirs centuries ago; and centuries hence England and France may be what those countries now are. Their streams run lawless as they did in the days of the Gauls and Britons, and with far more destructive results; but there is no remedy. There is little or no concert of action. The freedom of a man's doing what he pleases with his own stands in the way, and the government is quite powerless to repair the neglect of the individual proprietors. The owner may know the fatality which threatens his lands; but the knowing does not furnish motive sufficient for doing. It is precisely so in America. A considerable percentage of the soil is going to the ocean every year, and

there is no hand to arrest it. Formerly the rivers ran brown stained by the leaves of the forest; now, for a considerable part of the year, they run the color of the soil through which they pass. This was brought vividly to the writer's mind in the spring of 1881, when for weeks he witnessed the Potomac, as it passed Washington freighted red with the soil of Maryland and the two Virginias. All the hill country of Tennessee, Kentucky, Ohio, Pennsylvania, and many other States, with soil naturally fertile, is going in the same way, and there is no practical remedy. It is easy to say it might be different. But individuals study their immediate interests. They are not calculating, and very generally cannot afford to calculate, for future generations. The government might condemn such lands as it does the tracks of railroads, and undertake their conservation in a scientific way. This is, perhaps, the only method of attaining the end, but it will not be adopted; and it is just as well to say that such a result belongs to the category of impossible things. The machinery of government is in many ways a curse now to the governed, and the greater that machinery becomes, the greater is the contingency of its evils. And then shall the humble toiler on his little hill or mountain home be deprived of it against his will? This would not accord with the drift of achievements in the field of personal liberty. The Anglo-Saxon has watched, and wept, and prayed, and when there was need poured out his blood like water for the liberty of using his own tactics in the battle of life, and he would voluntarily surrender it now for no consideration. Indeed, even if the hill-lands could be conserved under paternalism, the cost might be too great. Better, perhaps, that the soil should continue to run to the sea than that the example of paternalism should breach the bulwarks of individual liberty.

It is in this way one good excludes another good, and both cannot be had at once—the possession of one necessarily excluding the other. If there is full recognition of personal rights, the hill-country deteriorates; and a thing so important as the preservation intact of the means of production from the soil

is incompatible with what is equally important, the preservation of an open field for the exercise of personal sovereignty.

Since the writing of the above I find an account in the *Popular Science Monthly* (October, 1881) from the *Revue des Deux Mondes*, of measures taken by the French government for the reclamation of some of the damaged Alpine lands. It is done by breaking the force of the torrents by means of wattles and dams, and by re-wooding the belt formerly in forests, and which lies between the pasture lands above and the agricultural lands below. Serious opposition was made in some of the communes even under French rule, which retains more of the paternal in form and spirit than is to be found in England and America; and it is not at all certain that the successful beginning which has been made will be considerably extended. One stream is spoken of which has been transformed from a raging torrent to a peaceful river at a cost of twenty-four thousand dollars, and the general picture given of success is rosy indeed; but, admitting that it is all that is claimed in preventing the escape of the soil, one can not but reflect that the permanence of the improvement can only be maintained by the constant exercise of the same paternalism which made it. The opposition which was made grew out of interference with an immediate interest—the temporary interdiction of pasturage; and if left to individual management the new forests will go like the old; the wattles and dams will be torn away; the torrent will in time resume its former violence, and the soil again find a lodging place at the bottom of the sea. The difficulties of the problem have not yet been set aside.

SECTION 179.—The fact of waste brings to the mind in a striking manner the form of antagonism which is presented by the pressure of population against the limits of the arable lands of the earth, and the resistance of said limits to further exaction for human sustenance. If the surface of the earth were not a determinate quantity, the numbers of the human race might go on increasing forever without obstruction, except that which is experienced in subjecting the lands,—a form of resistance,

which, as the fact proves, rather facilitates than hinders the increase of population. But the surface of the earth is an absolute quantity; and though the extent of habitable land may yet be considerably increased by clearing, draining, irrigating, and the like means of industrial conquest, yet, as we have seen, while growth is taking place on one side, there is falling off on the other. For a long time to come the excess of acquisition over the loss may be considerable; but the time must come when there will be no further additions to the habitable surface of the earth; and the time may come when the additions of new lands having ceased, and the old still wearing slowly away, the aggregate of arable lands will suffer a gradual diminution. But whether there is ever absolute diminution or not, the extent and availability of arable surface will one day reach their maximum under the subjecting hand of man, and when that maximum is reached, the possibilities of the earth's population will be bound round by a cordon of economical necessities which cannot be broken. The resistance of this limit to the further progress of population will be effectual and complete. Resistance to natural tendencies will make itself felt in some form or other. If the causes which depress the activities of reproduction are not sufficiently active to keep down population, it must eventually reach the utmost limit of a healthy and comfortable subsistence. Here, as so generally elsewhere, limitation and conflict put in an appearance and play their rôle.

The preceding statement is made on two presumptions: one is that science will not discover some short road to unlimited means of sustenance, as for example, by their ready creation out of the simple elements. But until this is done or until there is some assured anticipation of its accomplishment, we shall have to base our contemplation of future prospects, as far as sustenance is concerned, on the slow and expensive, but well assured process of vegetable elaboration. The other is the presumption of geographical stability. But this is not to be counted on. The arable surface of the earth may be increased. Bengal and other less areas are new-made lands. If the waters

of the surface should gradually descend into the earth beyond the possibility of restoration, or if the ocean beds should deepen, the area of dry land would be increased. Such loss of water by descent into the interior of the earth, while it might afford a minimum of temporary relief, would nevertheless be an ill omen, since it would eventually bring about on our planet the condition which now exists on the moon, and no living thing could find subsistence. If the ocean-beds are sinking, they are probably filling up with sediment as fast as room is made by depression. There is little change to be expected from this source, and it is as likely to reduce as to increase the area of arable lands. An "Atlantic continent" may have sunk into the ocean, and we know that the wearing of the waters is steadily reducing the acres from which mankind draw sustenance.

SECTION 180.—Man is the merest puppet that dances to the play of great physical agencies. He talks about perpetual growth in riches and power, and the unchecked evolution of society, till we grow dizzy contemplating the magnificence of results, as if man would be master of the earth; but the earth will always be man's master, and he must submit to its limitations. Suppose the present civilized world, after thousands of years of development, has accomplished marvelous results, and is looking forward to still greater, when an ice age, as in times past, creeps over the land, and slowly but surely overwhelms hamlets and cities, monuments of industry and art and millions of homes in glacial ruin, and buries even great names in everlasting oblivion,—what becomes of man's boasted mastery over nature and his ability to transform earth into Eden? Over the great causes which determine climate man can have no power whatever.

The one thing especially to be learned on this subject from the geological record is, that taking in periods of considerable extent, there is nothing better established than the instability of climate; and we should infer therefrom that, altogether likely in the future, perhaps not very distant, the climatic conditions of a high order of society may shift from one latitude to another,

degrading the civilization in one region, and giving it opportunity to develop in another. Something of this kind seems to have been taking place within the historical period, and it is probable that such changes of condition will still continue, alternating from one form to another. Such alternations of climate have greatly affected the flora and fauna of various latitudes, and have brought to the same parallel animals and plants which naturally belong to parallels wide asunder. In the Miocene, plants of the temperate zone (thirty-ninth parallel) are found within the arctic circle, and even the magnolia bloomed within ten degrees of the north pole (Prof. Heer); while at a later period, animals from the north and from the south have alternated with each other and found common graves in latitudes where the present climate is adapted to neither.

It is a curious but chastening reflection on human destiny to think of the antiquarians of some future civilization excavating the sites of our cities north of the fortieth parallel for the remains of our civilization. Indeed, the very materials of our cities and of all industrial creation would be scattered by an ice age like the past among the debris and boulders of the new drift. We should wonder where then they will find those Utopian books which insist on human perfection, and a future period of harmony and undisturbed equilibrium between man and his environment.

But even if the extreme of cold should not be as great as in the past, the injury inflicted would be infinitely greater, owing to the existence of great civilizations in the northern hemisphere, a condition which was totally wanting during the former glacial reign.

The changes towards such a period of cold, if begun, would come on slowly. It would require an age, and perhaps the record of instruments to discover a perceptible difference in the climate along the fortieth parallel, say. But if slow, results would be none the less certain. Habitable regions would become uninhabitable, and population would be gradually, but surely pressed from the North toward the South. A decline of popu-

lation would become compulsory through increasing shortage of subsistence, with whatever evils this would entail. Such considerations do not point to an era of undisturbed adjustment in the future ; and it is logically incumbent on the Utopians to break the force of the facts which point so unerringly to this form of future physical disturbance.

It does not set aside these considerations to instance the fact that, on the whole, through all these changes of the past, species have continued to ascend to higher types with more highly organized brains. There must come an end to this ascending movement, and we may already have reached it. The point is this,—even the improvement of type has come up through perpetual disturbance and much tribulation involving the pain of continual adjustment, without which it could not have taken place ; and therefore, it is not possible to extort from this fact any legitimate support for the optimism which revels in the dream of a perpetual paradise.

SECTION 181.—But, in forecasting the future, it is not necessary to insist on a “first class,” or even a second class, ice-age. The great work of Croll on Climate and Time seems to have placed the glacial epoch where Darwin’s work on the Origin of Species had placed the question of development. If it does not account for the phenomena, it is, nevertheless, the only attempt which makes even a plausible approach towards doing so. In this theory, the glacial epoch is referred primarily to astronomical causes, and secondarily to changes which these bring about on the earth itself. There have probably been many great alternations of climate in the past, and many glacial epochs. These epochs appear to be of compound character owing to alternations of extreme heat and extreme cold. Speaking only of later geological times, there is evidence that there was such a period in the Eocene, and another of great severity in the Miocene. Still later, in the Post-Pliocene, there was a period of the kind which is characterized as *the* glacial epoch, or ice-age.

If the extreme eccentricity of the earth’s orbit be necessary to

the production of a glacial climate, the recurrence of another ice-age is a long way still in the future. The last glacial period may have occurred from eighty thousand to two hundred and forty thousand years ago, and it would be about one hundred and fifty thousand years more before similar, but much less favorable, conditions for glacial action could again come round; the conditions of an extreme ice-period being still more remote. But it is so unlike our experience that we can hardly realize the desolation which would attend the cold necessary to perpetual ice thousands of feet thick in the north temperate zone, and sending glaciers and icebergs down past the fortieth parallel. What would be the chances for civilization anywhere in the northern hemisphere under such circumstances? But if this extreme of frigid conditions is not to be apprehended as near at hand, there are milder forms of such conditions which are probably not very remote. There are periods of twenty-one thousand years when the winter season corresponds with aphelion or the earth's greatest distance from the sun. The changes which this may bring about under the very moderate eccentricity of the earth's orbit which now obtains, may greatly shift the localities most favorable to the development of civilization. During the whole of the historical period climatic conditions have probably been growing more and more favorable in the more northern regions,—a fact to be placed beside this other fact, that, during the historical period civilization has been pushing its way northward. The greatest powers of the earth have been gradually shifting their centres toward higher latitudes. About six hundred years ago the winter of the northern hemisphere corresponded with perihelion, the earth's least distance from the sun. Since then our winters occur farther and farther from the sun, and they will continue to do so for nearly ten thousand years to come. The present small eccentricity of the earth's orbit with its gradual diminution affords no basis for an ice-age, but it is believed that there are already indications of approaching cold. "It is certainly not merely a chance coincidence that in general the climate of Europe is deteriorating, that Greenland is covered with

ice, that the colony of Iceland is disappearing, that ice encumbers the Spitzbergen island, Behring's strait, and Baffin's bay. It should also be observed that it was about this period that the glaciers of the Alps commenced to extend more and more, and that the culture of the vine has disappeared in many localities in France." (Professor George Pilar, University of Brussels. *Revolutions of the Crust of the Earth*. Smithsonian Report, 1876). Iceland, now becoming desolate, had a high civilization in the twelfth century with fine birch forests cheered by the song of the nightingale. Greenland previous to the fourteenth century was a flourishing colony, but is now covered with ice. At the same time it is believed that the austral glacier is beginning to disappear, and that the climate of the southern hemisphere is improving.

It is impossible to estimate with any degree of precision what will be the effects of the continual change which is carrying our winter from perihelion to aphelion. It is difficult to believe that six hundred years has made any considerable difference. It is not at all improbable that with the advance of the northern winter toward aphelion, or greatest distance from the sun, results will greatly multiply, increasing in something like a geometrical progression. This may be illustrated by the influence on surface currents of the ocean by increasing cold in the northern hemisphere and increasing warmth in the southern hemisphere. These now set mainly from the south to the north, bringing into our hemisphere much of the heat which is generated by the sun in the southern hemisphere, already less favored in other ways than our own. The poorer climate is thus robbed to make the rich one richer. The surface winds blow from the colder to the warmer hemisphere, thus favoring the drift of ocean currents in the same direction. With the conditions reversed and our hemisphere the colder, as it must become under the continual action of precession, these currents of the atmosphere and of the ocean will be reversed, passing mainly from north to south and robbing our hemisphere of part of its otherwise reduced heat to increase that of the southern hemisphere. This

would be a powerful factor affecting for evil the habitable condition of the north. Even the drifting waters which feed the Gulf stream might largely be turned to the southward at Cape St. Roque, and not come north, as at present, with their genial influence. Anything like this would produce a great change for the worse, since, according to Croll's calculations, the Gulf stream brings to the north temperate zone one-fourth as much heat as most of the Atlantic in the same zone receives from the direct rays of the sun.

There is some ground to apprehend that a period in the future as great as the historical period of the past will bring the earth to some such climatic conditions as these. The influence of the greater quantity of land in the northern hemisphere need hardly be taken into account, since its greater absorption of heat during the hot summer is offset by its greater radiation of heat during the cold winter, and more than offset in the higher latitudes where the surface is covered with perpetual ice. And in lower latitudes the extremes of reaction from the greater cold of winter to the greater heat of summer, every year, would make a climate of violence and harshness totally incompatible with paradisiacal conceptions.

But the northern hemisphere may not then, quite so much as now, exceed the southern in superficial area. If the ice be gradually reduced at the southern pole, and increased at the northern pole, the waters of the earth's surface would shift, under the action of gravity, from the south toward the north, in consequence of which southern lands would emerge, and northern lands would be submerged. Since the Alps—a comparatively recent mountain system—were elevated, water has stood around them at different times 9,000 feet deep, 7,500 feet, and 4,800 feet, as shown by lines of erosion. "Analogous lines are found in Scotland, Sweden, and some of the African islands." Of course the ice-caps at the poles cannot become very thick except when winter corresponds with aphelion during extreme eccentricity of the earth's orbit; so that when we reach the 10,500 years from A. D. 1248, the northern ice-cap cannot be great,

owing to moderate eccentricity; and while some displacement of water from south to north is to be expected under the circumstances, it may not be considerable, though any at all would reduce the habitable area where civilization now exists.

Croll estimates that when the earth was last in aphelion during winter, the eccentricity being somewhat greater than now, it was probably 10° or 15° colder than at present. If the Gulf stream was reduced in volume, the cold was even greater. When the earth next reaches aphelion, about 10,000 years hence, eccentricity will be still less; but allowing—all conditions affecting temperature considered—that the climate in our hemisphere would be 10° colder than at present, the isotherms, or lines of like temperature, would be pushed to the southward at least twelve degrees. The climate of Jacksonville, Florida, would then correspond with the present climate of Cleveland, Ohio. Adjustment to a deteriorating climate would have to be taking place for thousands of years before this extreme limit had been reached; and the centers of wealth and power would be steadily pushed to the southward. We regard such a result with skepticism, because of the short duration of individual consciousness compared with the length of the period required for the change to take place. We mistake the stability of consciousness for the stability of nature.

CHAPTER XXVII.

MAN'S ENVIRONMENT—ECONOMICAL DIFFICULTIES OF LIMITATION.

SECTION 182.—Whether or not it will be more difficult in the distant future to procure the satisfaction of human wants, is an inquiry so beset with uncertain, variable, and at present unascertainable elements that definite results cannot be reached. Still

it is an interesting inquiry, and involves a complication of opposing factors, which challenge attention on account of the intellectual æsthetics as well as the moral relations of the subject. All the considerations which bear on the inquiry arrange themselves around the leading factors, which may be stated, as the multiplying demands of increasing population *versus* the supply of increasing labor, capital, and invention applied to the earth's limited habitable area.

1. Increase of agricultural products from land already under cultivation is only to be had by a still greater increase of agricultural labor; that is, fifty per cent. increase of products would require more than fifty per cent. additional labor. In the aggregate, after the lands are all occupied and have to be put under high culture to supply the demands of increasing population, more labor in proportion to the products obtained will have to be expended on the soil. This is called the law of diminishing products.

2. The same law holds in relation to mining. This is not felt while new mines are constantly being opened, but the time will come when the old mines have been exhausted, and all the rest are in process of exhaustion. This will not tell so decisively in regard to the metals as in regard to coal. The wear, loss, consumption of the metals is not so complete, and to a certain extent they may be worked over again. In the case of coal the consumption is complete, without the possibility of restoration. Our present stirring, hopeful, happy, and progressive civilization is based literally on the heat and power which coal affords; and before the supply becomes exhausted, some other method or methods of heating and propelling must be discovered, else civilization will come to an end, and mankind will recede toward a less favorable condition of society. This is, of course, a long way in the future, but just as sure as one moment follows another, the day will come when, if coal continues to be the chief dependence for heat, the coal famine will be complete. But antecedent to this time, all along the downward curve of what may be called the coal movement, it will cost more and

more labor to obtain a given quantity of heat-force; while the increasing scarcity will compel a rigid economy in its use, and a gradual falling off in the energies of civilized life.

This statement is made in view of the present methods of utilizing motive power. It is altogether likely, however, that new applications of the natural forces will render civilization somewhat less dependent on the supply of coal than it is at present. The direct rays of the sun have already been utilized in the construction of engines of some power. So that, if it comes to the worst, sun-power might be used to drive machinery; but this would necessitate great industrial and commercial changes, involving great economical disadvantages. Manufacturing would have to be transferred to cloudless regions, as to Upper Egypt; and surely, in view of the breaking up and readjustment which this would necessitate, the optimistic enthusiasm of Ericsson, the inventor of a sun-engine, is hardly justified.

The ebb and flow of the tides and the fall of great rivers may, perhaps, be turned to account in the driving of machinery beyond anything yet dreamed of in practical life. The transmission of water-power to great distances by means of dynamic electricity, has been so far endorsed by competent authority, that it promises great results in the future, moral and social, as well as industrial; and it may be largely utilized long before the exhaustion of coal threatens the extinction of civilization.—(Popular Science Monthly, July, 1879). But this would still leave a desideratum in regard to heating power;—which, however, promises to be speedily supplied. Water is to be transformed into fuel. By uniting hydrogen with the carbon of refuse coal, a gas is obtained, which has two and three-quarter times more heating power than the coal it is made from, when burned by the most economical methods known, and fourteen times as much as coal when burned in common stoves. It may be used for engines and in making iron, better and more economically than is now done—so claimed.—(Popular Science Monthly, March, 1880). But while water-power may be transmitted to great distances by dynamic electricity, while sun-power may be used

for driving machinery, while the energy of atomic separation effected by electricity may be stored for future use, while the refuse of coal may be made more effective than coal itself for heating purposes,—all these economies and substitutes require preparation, the outlay of labor and capital, for their utilization. While there are substitution and saving, these are only to be had at a certain cost. All the new appliances for heating and propulsion are substantially but devices to forestall deterioration in the forces of civilized society. They promise little or no absolute gain. They are not simpler nor cheaper, and are oftener worse than better, than the present sources of heat and power; but they are less wasteful, and their value consists mainly in that they may lessen the consumption of coal, and keep down its cost for some time to come.

3. The increase of population co-operates with the increased difficulties of cultivating the soil and working the mines to add to the burthen of labor. This is, of course, only felt, in the present state of civilization, in densely peopled countries. It is the absolute limit of the arable area that tells unfavorably. A given area will produce only a given quantity of subsistence, and the inhabitants would still require enough to live on, however equally wealth might be distributed among them. Mill observes: "A greater number of people cannot, in any given state of civilization, be collectively so well provided for as a smaller. The niggardliness of nature, not the injustice of society, is the cause of the penalty attached to over-population. An unjust distribution of wealth does not even aggravate the evil, but, at most, causes it to be somewhat earlier felt."—(P. E., Book I., Chapter XIII., Section 2). Density of population, by its own necessities, tells against the supply of wants in consequence of the law of diminishing product from equal labor, when the earth is taxed for the greatest possible production.

4. In the course of civilized progress, a count which directly antagonizes the foregoing is the improvement of agricultural implements and methods. This has made enormous strides

within the last thirty years, more, perhaps, than it will again make for a long time to come.

5. An additional count which indirectly antagonizes the law of diminishing product in agricultural industry, is improvement in the implements of manufacturing, in consequence of which, the products of the same labor are greatly multiplied. The labor of all supplies the needs of all, and when manufacturing is greatly aided by machinery, it may spare hands to make amends for the additional labor which high culture of the soil makes necessary.

6. But in connection with this, it is to be noted that the first effect of improved methods of manufacturing is greatly to cheapen products. This places them within reach of a greater proportion of the people, and with the progress of civilization, they come to use articles of which their ancestors knew nothing. All kinds of products of the soil and of the shops are improved and multiplied, and what in past times were considered as luxuries have come to be regarded as necessities. This process is going on at the present time, so that with the improvement of machinery and production, the demand easily keeps pace. It does not require several generations for the use of an article of luxury to come to be regarded as a "necessary;" a very few years is sufficient, and a succession of such results may take place within the same generation. Then does this multiplication of wants co-operate with the law of diminishing products from the soil and the mines, and with the increase of the population, to antagonize the effects of improvement in farm implements and manufacturing machinery. At present this antagonizing influence is not so much felt, although people, in spite of all our labor-saving machinery, have to work as hard as ever. This is the case even while the pressure of population is constantly relieved by emigration. It is where the earth is filled up, and there are no more wild lands to subdue that the indulgence of luxurious habits, formed in times of superabundant production, will tell most severely against the adequate supply of human wants. Then if no new wants were thus developed when production outstripped population, we may be sure that the demands of population would eventually catch

up with the supply. Generally, increase of numbers under abundance is steady and rapid; but the same continuous increase cannot be true of methods and inventions which further production. These advance by leaps, and its indefinite continued progress cannot be counted on. Hence, population would come up to the supply even if new wants were not developed; but when we add the enormous demand brought into existence by these new wants, the demand, almost without interval for the taking of breath, keeps pace with the supply; so that population and the wants of population are ever pressing against the boundaries; in other words, the wants of mankind are ever driving the laborer to the utmost of his endurance to keep up the level of the supply. And with the occupancy of all the arable surface of the earth, and the soil taxed to its utmost for the sustenance of the greatest possible population, there will be no relaxation in the demand for labor. And long before this time, the alternative may be between the further increase of population with a corresponding retrenchment of wants, and the checking of population without such retrenchment. In India where population is fully up to the supply of food, great famines, in which millions perish, follow one another in rapid succession. Population is kept down by starvation, a province sometimes losing more than a fourth of its people before relief can be obtained. And even when actual famine does not exist, the people are quite commonly in a chronic state of semi-starvation; and what is true in this respect of India is very largely true of the great empire of China. It is not to be calculated that such will be the fate of the whole population of the earth when it reaches the maximum limit of supply. The greater intelligence and system which it is to be hoped will then prevail, may prevent this painful method of keeping population within the bounds of an assured and liberal support. But by whatever method population may be kept down, there will be more or less of painfulness, whether it be by voluntary restraint or by the debilitating effects of luxury and extravagance in a part of the population. And in default of this, there must still be pain; for if, in consequence of over-popula-

tion in the future, it shall become necessary to forego the gratification of wants which have become established through long habit, it will then be not the good time to come or coming, but the good time gone.

SECTION 183.—Any attempt to penetrate the future of the race must be inadequate that takes no account of the multiplication of human wants. How this multiplication is taking place in our own times, every one may readily observe for himself. With all our power looms, sewing machines, reapers, and threshers, men and women are as much driven as when all this work was done by hand with only the simplest tools. As an apt illustration of this, although verging on the ridiculous, is the fact that country ladies in America expend several hundred per cent. more labor and time in making dresses with the aid of sewing machines, than in former times without such aid. More than this, the intricacies of the art have sprung into existence a class of professionals who have their shops in every village, and even go from house to house, exercising their craft. The writer is able to recall the time when a woman, having charge of a family of five or six, would do all the housework and the washing, spin the flax, weave the flannel and jeans, cut out and make her own and her girls' dresses, and the father's and boys' suits, and then apparently have as much leisure as a woman with such a family now has, who neither spins the flax, nor weaves the jeans and flannel, nor makes the family's clothes. [By a coincidence of suggestion it happens that both Larned and myself have used this same case to illustrate the same subject. I quote only one sentence giving the reason why sewing machines have utterly failed to accomplish what one would have taken to be their most obvious purpose—the saving of labor: "Because a despicable, senseless, and most vulgar vanity in that minor fraction of mankind which has the power, more or less, to command labor, at will, refuses to let clothing be cheapened, and persists in the contemptible display of an ability to possess and to wear clothes which cost much labor."—(*Talks about Labor*, 125).] Some way or other does it turn out that the exactions of taste and vanity in some of their

many forms do keep up with the facilities of gratification, and only abate in their demands when compelled to by the more urgent claims of subsistence. And the vain and frivolous tastes are precisely those which govern most family circles and the great mass of human beings. Money made and used for their gratification is money made and used for the great ends of life; time spent and money used for the gratification of finer tastes and the carrying of higher purposes, goes without large sympathy, and is condemned as unprofitable. But even with the abatement of the coarser vanities, we should probably be no better off than before on the score of economy. Even if the frivolities of taste should become less exacting, they will only abate their demands on the origin of higher tastes which are still more expensive.

So far as the labor for supply is concerned, the increase of wants does even more than the increase of population to render that labor more difficult. "In many respects it is more difficult to live to-day than it was a hundred years ago."—(Fiske.) The gratification of newly originated wants consumes capital which otherwise would assist labor in procuring a needful supply for the simple wants of life. What is gained by improved methods is lost by extravagant consumption, and there is even less leisure than before. "The factor that multiplies is the ever growing wants of man" (Walker), and there seems to be no limit whatever to the multiplication of human wants; and even if population should be kept within bounds, the fewer people with more wants would be in some sense an equivalent for the greater number of people with fewer wants. It is difficult to see how the pressure on labor is to be removed in the future, unless there be a revolution in human nature of a character not yet foreshadowed. When the habitable earth is full of people who are full of wants, there can be no relief, as now, by removal to new lands;—what is the guaranty that there will then be a full and constant flow of the means of gratification? Is it not rather to be apprehended that there will be inevitable stinting, and that, too, as the first necessary step for relief which must come

in one or the other of two forms? Either, population must then be reduced, or else there must be a systematic abatement of wants.

SECTION 184.—But will the earth fill up everywhere as at present in India, China, Japan, and parts of Europe? The law of history in this respect probably is, that, according to the state of society, the inhabitants multiply till they have taken up all the available room. While peoples are hunters only, a great deal of territory is required for the sustenance of a small population. But unless mutual extermination or disease in the locality prevent, tribes of hunters, even, come to overtake the means of subsistence. If they had never done so, mankind might have ever remained hunters. The scarcity of food led to other devices, and animals were secured, domesticated, and cared for, and hunters then became shepherds. This gave to the territory greater capacity for inhabitants, and it filled up accordingly. And, again, when there came to be too many people for the means of subsistence, another step was taken, and agriculture was adopted, and thus room was made for a still denser population. Commerce was all along growing, and by-and-by manufactures sprung up, industries were diversified, and by a sort of miracle, the area expanded for more people. Cities sprang into existence, and the country filled up to the extent of its possibilities.

During all the time there were two counter tendencies developing side by side:—(1) the facilities for supplying the means of living, and (2) the multiplication of wants requiring constantly more of such means, the former steadily gaining on the latter, and consequently making a greater population possible. The vanities were active from the first; but it was only after commerce and manufactures had considerable development that the means of gratification were at hand to stimulate them into new and diversified forms. With the advance of civilization they appear to multiply in geometrical progression. But, notwithstanding the large proportion of human labor which is expended in the gratification of the petty vanities of life, such

are the improved facilities for production, that the capacity of territory for population has increased up to the present time, and will no doubt continue to increase for some time to come. But emigration has been and still is largely due to the filling up and overflowing of population. It was this, no doubt, under more primitive conditions that sent the hordes of intruders from Asia into Europe, and kept up the stream with intervals for centuries. It is this that is at the present time sending its millions from Europe to America. Time is required for the filling up; but time is plenty, and the filling up always goes on till the overflow begins.

I am well aware that a high civilization keeps down multiplication in certain classes, and if these were the only classes in society, or if all the people could rise to these social strata, population might generally come to a stand-still with the advance of civilization. But all classes cannot so rise. The very existence of the "upper classes" which fail at length to multiply and keep their numbers good by natural increase, could not be maintained but for the "lower classes," on which they rest for vitality and support. It is these lower classes that multiply; and never fear, there will be such classes in some country or other, indeed, in many countries, if not in all, to multiply and run over into territorial vacancies wherever they may be found. It is true that nations sometimes decline in population from other than physical causes. They may not have worn out their soil nor suffered in their commercial position, but, like provinces of the Roman empire in later times, they may be harassed by mal-administration and crushed out of existence by the burthen of taxation. But if not prevented by political and social disability, every country will in time fill up to the extent of its civilized capacity as formed by its industrial, commercial, and physical conditions.

The discovery of great continents is quite recent, and hence there is at present a large outlet for emigration, but this will in time come to an end, and the earth will be full of people according to the enlarged capacity which higher civilization gives. If that should be, what then? Long before that time, and still more then, there must be a curtailing of wants, luxuries must

be dispensed with, and the many must learn to do with the simple necessities of life, and with food in its simplest and cheapest forms.

SECTION 185.—One of the consequences of the compression of population by the earth's limits, would be a change in the character of human food. The dearer kinds of food must go out of use as want pinches, and the cheaper kinds would come more and more into use. Flesh would be dispensed with, and all food, it may be, grown direct from the soil. This state of things has already been reached in China and India, where density of population has long made the supply of food the most urgent of economical problems. In Europe, the poorer people have to do almost wholly without meat, and even in some American localities there is a tendency in the same direction. It is true that under favorable changes in modern economics, there is sometimes improvement in this respect, as in England, Germany, and other European countries, during the last forty years ; but it is easy to err in taking such tendencies to be perpetual. It must be remembered that our present civilization is in its upward curve. The improvement of machinery and the unparalleled increase of capital, the virgin lands of new continents, and the open fields thus secured for emigration wherever numbers press, together with increased facilities for intelligence and transportation, and the light thrown upon the results of economical habits—have all contributed in some measure to improve the condition of the poorer classes ; but these tendencies have their limit, and will have their day, to be followed by population, even in the most prosperous countries, up to the limits of supply. Most of these tendencies unfortunately contain within themselves the very conditions which must, at last, thwart their own beneficent action by the rapid multiplication of numbers, till there will no longer be relief through the outlet for emigration to virgin lands.

Our vegetarians would not regard restriction to vegetable food as an evil, but as a good ; however, this view is greatly open to question. It may be laid down as a law, that the simpler organ-

isms do with simpler forms of food than the more complex organisms. The higher forms must get their more diversified nourishment by utilizing what other digestive systems than their own have elaborated, as in the case of carnivorous animals; or else, they must obtain it through the action of a complicated digestive system of their own, as in the case of herbivorous animals. More of the energy of the system is required to manufacture nourishment out of grains, roots, fruits, and vegetables, than out of flesh, and this is indicated by the shorter and simpler digestive course of the flesh-eating animals. And, on a well known principle which governs vital action, the more expenditure there is in digestion, the less there is left for the remaining uses of the system. This principle has of late been graphically illustrated in the experiments of Dr. Angelo Mosso, of the University of Turin, with the plethysmograph, in which it is shown that the least ripple of emotion, by increasing the circulation of the brain, lessens the circulation in the arm.

Beside digestion, there are two other general forms of use or expenditure,—muscular exertion and mental exertion. Our work-animals are vegetable feeders, for an obvious reason, and they have great muscular endurance. This, however, does not tell against the principle in question. Before we attribute to it such value, we must know how far this muscular exertion trenches on the mental energies of the creature. The most intelligent animals other than the anthropoid, size allowed for, are doubtless animals which feed mainly on flesh, as the fox and dog. The greater size of the horse and elephant rule them out in a comparison of this kind. The principle of correlation, or that, in consequence of which, expenditure in one direction weakens the resources of expenditure in another direction, is one so well established that we should be safe to reason upon it deductively. If in addition to the larger outlay for the digestion of vegetable food, there is by the habit of the animal a large outlay for muscular exertion, the resources of energy for mental action are still further weakened. The best conditions for mental action and development would appear to be, the least possi-

ble outlay of energy in the proper digestion and assimilation of food, with such moderate muscular exercise as the healthy activity of the vital functions requires. It is with man, however, that we are especially concerned.

SECTION 186.—The so-called highest peoples, the most intellectual, those who have subordinated other peoples, and have made for the most part the known history of the world, are not the exclusive flesh-eaters, or vegetable eaters, but such as lay both kingdoms of nature under contribution for food, and add to this variety of nature by the appliances of art in the preparation. The greatest possible variety of food, compounded and prepared in the most nourishing and digestible forms, is no doubt the necessary condition of the highest manifestation of the human powers. "A people who live on rice will usually be found unfit to do anything better than grow rice. Monotony in food, as in other things, begets dullness."—(Chesney.) If this be true, simplification of diet with the growing density of population will detract from the aggregate of available human energy for sustaining the higher manifestations of mind. If by the loss of the more nourishing forms of food to be found in the flesh of animals, the digestive organs are more heavily taxed, while at the same time the muscular system is little or not at all exempted from labor, there is necessarily less energy for mental action, growth, and development.

To this must be added the organic disadvantages attendant upon making the change from a more nourishing to a less nourishing diet. Man's digestive apparatus appears to be best adapted to a mixed diet, lacking the complication of the vegetable feeders, and being more complex than that of the carnivorous species. Most of the discussion concerning man's natural diet assumes that whatever is natural has been so determined by decree, and is fixed and unchangeable. It has usually failed to perceive what points require to be made clear and definite. According to Flourens, "When man discovered fire and learned to soften, melt, and prepare animal and vegetable substances by cooking, he became able to nourish himself on every living thing.

and to avail himself of all the regimes. Man has then two forms of diet: one natural, primitive, instinctive, whereby he is frugivorous; the other artificial and wholly due to his intelligence, whereby he is omnivorous.”—(Longéveté Humaine, 127). The author uses the term “artificial,” as dependent on intelligence, in contra-distinction to the term “natural” which, under primitive conditions, depended on instinct. But we may suggest that what people are used to for many generations, becomes in a sense natural. The natural is not established by decree, but by habit. The art of cooking food is very much older than history; and we may properly say that cooked food forms a large part of the natural food of civilized people. What has been the habit of any race, animal or human, for myriads of years, cannot be changed without a shock to the organism; and if the change be from a richer diet to a poorer one, the effect must be deleterious, and the tendency must be toward degeneracy. Even if the body should not degenerate on the smaller resources of energy in consequence of the greater labor of digestion, still there is less energy at liberty for mental uses, and the mind must fall off in the average measure of its activities. [Dr. T. L. Nichols testifies that he writes from twelve to fifteen hours a day on milk, brown bread, and American dried apples, the whole costing in London but ten cents a day. He says: “My stomach has such light work that all life flows freely to the brain, and I can work on hour after hour.”—(Holbrook’s Hygiene of the Brain and Nerves). People have been known to abstain quite altogether from food in order to be inspirationally blessed, and with gratifying success. Dr. Nichols is making progress in this direction, since he regards the above diet as unnecessarily generous, and proposes to abridge it by dispensing with the milk. Such an experiment is not quite conclusive, unless we know the quality of work done under such regimen and the length of time it was kept up.]

Whole nations are at this moment suffering from stunted nourishment. The Hindoos, a gentle, harmless, industrious people, are only plodding, not brilliant, and are able to offer little resist-

ance to aggression. They are without the energy and enterprise which subdue the earth and turn every circumstance to advantage. There are places in India having a population of one thousand to the square mile; and yet fifteen thousand square miles of fertile lands in the valley of the Brahmapootra lie in jungle, and wild beasts have long been the terror of people even in the villages. Exclusive vegetable diet may, indeed, be compatible with great physical strength in man—it certainly is in the horse and ox; but what we insist upon is that a mixed and greatly diversified diet is best for the whole man.

The optimistic assumption is pleasant—that there will never be over-population, that wants will be moderated, that capital will greatly multiply so that little labor will be required to make a highly rational people happy—but, like many a pleasant thing, it may be delusive. Symmetry requires a certain correspondence of proportion between mind and body; and if little demand for muscular exertion should be the condition of future civilization, the physical will be almost sure to deteriorate; and if it becomes enfeebled through want of use, the mind will, to a certain extent and in time, partake of that feebleness. The body must be kept up even to a high standard of vigor if the mind is to be maintained at a similar standard, and this cannot be done without exercising the bodily powers. This is true for the race. A few generations might cultivate the brain at the expense of the body, but eventually the mind would begin to degenerate. This is frequently exemplified in the history of families. People from the country, with well developed bodies and with some opportunities for culture, drift to the cities, and take the lead in civilization. In a few generations these degenerate and die out, and others take their place. More than half the people in London were born outside that city. Such is the eternal round of rising in the physical and setting in the neglect of it. And all history teaches that, up to the present time, if people exert their physical energies to the highest point of development compatible with intellect, they must be compelled to do so by the exigencies of life. If it is different in the future, it

must be by a change in the human constitution; a change which is theoretically conceivable, but which has little logical weight till it is taken successfully out of theory and put in the way of becoming practical.

The statement concerning the loss to mankind of the more highly elaborated forms of food, has been made on the assumption that the earth would support the greatest number of inhabitants, to dispense with such food. It may be doubted, however, whether the fertility of the soil could be maintained under the exclusive culture of vegetable products with a greater supply of food, than could be afforded under mixed husbandry, including live stock. But even if more nourishment could be produced in a given time by the rearing of cattle, it is probable that the highest possible product would admit of only a moderate proportion of flesh food, being altogether an inadequate supply; consequently, the main idea of this discussion would still be true, and only slightly narrowed in its application.

The considerations of this and the two preceding sections, though by no means foreign to the subject, are yet to a tantalizing degree indeterminate in character; and the brief space into which it has been necessary to compress them, renders the statement no doubt unsatisfactory. Disputed ground has been rapidly traversed without the opportunity of anticipating criticism or of qualifying. The imperfect statement is submitted to the intelligent reader for what it may be worth in the way of suggestion, as relating to an inquiry which has interest for the life of current times, as well as for that which is to be in the future.

CHAPTER XXVIII.

THE FUTURE OF THE PHYSICAL ENVIRONMENT.

SECTION 187.—The future of the environment has necessarily been somewhat discussed in previous chapters, and little remains for this except general considerations and a brief reference to some of the leading points.

We may admit the equality of alternating action in the organic system; that is, its harmony as a "moving equilibrium." This may, theoretically, and in a qualified sense, does no doubt sometimes actually obtain for a time; but between this organism and its environment the supposed equilibrium is a very different thing. If not disturbed by external discords, the organism might come to act on the environment and be acted upon by it in a harmonious way; but disturbance constantly affects it from without, and is so fitful and capricious withal, that no possible conditions of orderly adaptation between it and the organism can obtain. [After the above was written, on turning for another purpose to my copy of Spencer's *Social Statics*, first edition, London, I was quite surprised to find the following note on the margin of page 63, which was penciled there on reading the volume fifteen years before in camp at Chattanooga: "If mankind have been half a million years or so attaining to their present state of adaptedness, how many million years will it take them to become perfectly adapted to the environment? If the outer conditions mold the man as the author claims, and these conditions are constantly changing, as they always have and I presume always will, is it possible for mankind to catch up with those conditions, since time is requisite for the molding process?"] Constant changes of temperature, for example, are a constant source of organic discord; and

with all the appliances of civilization yet at hand, these changes cannot always be happily met by the organism. Immense downpours of rain and accompanying floods have always done mischief, and instead of making headway against these sources of discord, the evil becomes constantly greater as civilization advances. As I write (October, 1878), word comes of a great wind and rain storm along the entire eastern coast of the United States, by which, notwithstanding the warnings of the Signal office, many lives and millions of property have been destroyed. And the like is not an exceptional but a comparatively regular occurrence. As long as earthquakes occur, they will be attended with disaster, and, as already stated, the more populous and improved the earth is, the greater the disasters will be. The same is true of hurricanes, monsoons, typhoons, and every form of meteorological violence. If the coast of India had been a wilderness or a desert, the terrible destruction of life and property would not have taken place from the fatal wave which recently broke upon its coast.

SECTION 188.—Then it really appears that so far from getting rid of these physical disturbances as the world grows older, they are likely to become more hurtful than ever, since by the very conditions of civilization, life and its belongings are more at the mercy of the destructive agencies. This, of course, assumes that they shall remain unabated in power. But suppose they abate: the winds shall not blow so furiously, nor bring with them such sudden alternations of heat and cold, and the rains shall never come down in floods, nor abstain from coming till the earth is parched, what would be the cost of this gain? We are not acquainted at present with any means of avoiding these extremes, except by a diminution of the sun's power, which mainly causes them, and such diminution would entail worse evils than those with which we are now afflicted. A sufficient reduction of temperature to do away with storms and floods and sudden changes of wind and temperature, would do away with all the higher forms of life; and death would be the price of harmony in the elements.

As long as earthquakes continue, sentient existence will suffer from their action. And if these subterranean forces should ever cease, the immunity from suffering thus secured would be at the cost no less than that of ultimate extinction, since with the cessation of upheaval, the waters would at once gain on the area of the land, and continue until the ocean should cover the entire surface of the earth. Such would be the result if the sun's heat should remain unabated, and all the water should remain then as now at the surface; but on the abatement of the subterranean forces, it is believed that the water would gradually sink into the interior of the earth. With this reduction of water on the surface, the present area of dry land might still be maintained, with a necessary change, however, in the rain system of the earth, which would greatly reduce its capacity for production. And with the disappearance of all the water from the surface, or most of it, the earth would become uninhabitable.

Radiation from the solar system into space is constantly going on. There may be some compensation for this loss by the fall of meteors, but this supply has its limitations, and the surplus of radiation must eventually tell on the conditions of existence. Heat as a form of motion is necessary to all forms of motion, not excepting those which constitute life. The doom of all organic existence is legibly written in the dissipation of energy. The tendency toward equilibrium is the tendency toward death. Physicists tell us that the earth is fated to become as the moon now is. As the cooling process goes on, the waters will sink away from the surface, and even the atmosphere will at last disappear; and life will vanish with the conditions of life. This, it seems, would be the case even if the sun should retain its present heating power, as the condition of the moon proves. But the sun itself will lose the power of imparting to surrounding planets the stimulus of organic existence, and then death must be universal throughout the system.

The optimist, however, says: "O, you are looking too far ahead; this remote future concerns us very little; it is with the present and the near future we have to do." Very well; but the

optimists' "harmony" and "perfection" have not prevailed in the past, do not in the present, and will not in the near future, and if ever, it must be in the remote future—just where, as we have seen, in its physical aspects, the Utopia is liable most signally to fail. We must take the past and the present as the basis from which to forecast the near future, and we must adhere to the type for which the past and present fairly give warrant. To determine what that type is has been the end and aim of this investigation from first to last. And in order to understand it at all, we must contemplate the subject in its entirety, and that comprehends the past, the present, and as much of the future as there is reasonable warrant for. As remote as an ice-age or a material diminution of the sun's heat may be, a consideration of the problem of life and happiness on the earth as a member of the solar system, compels us to contemplate these contingencies.

Our knowledge of the direct elements of the problem relates only to the past and to the current history of life on earth. In this we have seen that the physical discordances, in the midst of which man lives, tell rather more severely against him as he advances to the higher planes of existence. This is the ascending curve: how will it be in the descending curve? After the race has passed the zenith of its existence and has entered on the descending course, what will be its experience with these discordances in the environment? Mention has already been made of the evils which would attend decline in the violent action of the natural forces,—that with this decline there would be necessarily a falling off in the conditions of life. The race, no doubt more conscious than at present of the limitations of destiny, would not as now contemplate the future with the certainty of progress, but with the certainty of retrogression, gradual decline, and ultimate extinction.

SECTION 189.—But it is not necessary to this study to look so far ahead, or to lay stress on doubtful elements of the problem. Limitations and discordances threaten to spring up in the near future. The gradual drifting of our northern winter toward

the earth's greatest distance from the sun, even under present low eccentricity, must deteriorate our climate and render it less favorable for civilization along parallels where the greatest prosperity now exists. The time is not far distant when the means of heat and light which civilization requires, so far as dependent on their present chief source, must become constantly more expensive, costing more of human energy for an adequate supply. The washing away of our mountain, hilly, and sloping lands will not abate, and in the near future, it will tell seriously against the prosperity of many and extensive areas in our own and other countries. And here it is not merely the actual loss of land that does the mischief. With the lowering of hills and mountains there will be less condensation from the clouds, and regions now fertile will suffer for the want of rain. Add to this the gradual descent of water and its crystallization in the interior of the earth, of which there is at present strong evidence, and the quantity of rain will be still further reduced, and the extent of desert still more increased.

In the course of an interesting article on the Probable Future of the Human Race (Smithsonian Report, 1875), Alphonse de Candolle passes under review the obstructions likely to fall in the way of future progress, and says: "To recapitulate, our period, or that which will follow for the next thousand years, will be characterized by a great increase of population, and mingling of races, and a prosperity more or less marked. Then will probably follow a long period of diminution of population, of separation of peoples, and of decadence." It is not at all improbable that the people living in the future not more remote from us than we are from ancient civilizations of Greece and Rome, will look back upon our period as one of the happiest in the whole history of the race. Novelties constantly arising for the refreshing of interest in the activities of life, the frequent changes on the great theatre of civilization, the improvements, the breaking down of all manner of limitations to the free play of individual energy and enterprise, the peaceful crumbling away of the old, and the welcome substitution of the new, the hopeful-

ness everywhere thus engendered,—all these will take such prominence in history as to make us the envy of those who live in far distant times. We do not appreciate our rare privileges; they who come after will give little attention to the current evils we so magnify; and if their probable view of it, as here suggested, should lead us to think more of our own brilliant period, and dream less of impossible paradises in the future, we should probably lose nothing of real value to the present.

We must remember that, as history reveals it, the destiny of man on earth is an alternating one, sometimes up, sometimes down; and it by no means follows that after an intervening depression, the next ascending movement will be greater than any before. It may, or it may not fall short. It is an error, readily engendered by the brilliant achievements of our own period beyond anything in the past, to assume that each succeeding upward curve must necessarily rise the highest. Our own period of improvement is the only one following the Greek which has surpassed that—and surpassed it in the aggregate only a little way. There is hardly any doubt that the present upward curve is the highest the world will ever know. The question, of course, turns upon the two points, how high it will rise, and how long a period of man's existence on earth it will cover.

Let it be here observed that, while these considerations are fatal to extreme optimism, they do not establish pessimism, nor afford any warrant for malevolence. The declining period of a man's life is not necessarily a period of gloom, but has its forms of compensation, so it may be in the like period or periods of the race's existence. But as inevitable drawbacks have attended all along the great ascending curve of human existence, like drawbacks somewhat modified, and increased rather than diminished in their depressive action, will attend in all the descending curves. The inevitable in the physical discordances of man's environment affords no ground for the indulgence of misanthropy. Man was organized in the midst of these discordances, and they are not incompatible with a great predominance of happiness in life. They are, however, incompatible with the

chimera of equilibrium between man and his environment, and with every form of the millennial or paradisiacal notion.

SECTION 190.—I am aware that there are imaginative persons, whose mental methods are not strictly scientific, who believe and teach that physical perfection is possible. Fourier will create in a most arbitrary manner a "boreal crown," a sort of electrical sun at the north pole, from which shall be diffused a genial and life-giving influence, making the climate and seasons throughout paradisiacal. Oranges will grow in Siberia and the sea become as delicious as nectar. There is no warrant in known physical laws for such assumptions, and we may pass them by as purely gratuitous. It would be less arbitrary and just as easy, perhaps, to set the earth's axis perpendicular to the plane of the ecliptic and level down the surface *a la* Burnet—and then get the paradise only by a perpetual miracle. But Winwood Reade excels in this direction: "Finally," he says, "men will master the forces of nature; they will become themselves architects of systems, manufacturers of worlds." And he thinks they will "invent immortality" on earth, and visit from planet to planet and from sun to sun, not waiting like Thomas Dick for these privileges till after the transformation of death, beyond which the imagination is not under restraint from the impassable barriers of fact. Others, more moderate in their expectations, entertain the idea of controlling the meteorological elements, regulating the quantity of rainfall, tempering and directing the winds, affording harmless escape to the subterranean forces, and the like. An American writer will have volcanoes die out and earthquakes cease, while the water will sink away from the surface and leave more dry land for the use of man,—apparently forgetting that it is the lifting power of the internal forces that has made, maintained, and added to our land area, and that, if the proportion of the water area is considerably reduced, there will be less rainfall with more land needing it, and consequently larger areas of desert. However, this is to be obviated by means of hot water from the interior of the earth carried in pipes through the soil, while a covering of glass overhead will shut out the

winter, and production will go on the year round on earth as in paradise. Machinery will be driven by earthquake-power, and life on earth will be a continual holiday. According to Von Prittwitz (quoted by Roscher), capital is to become so abundant that it will command no interest. The earth will become a universal park, and people may migrate like birds to escape the cold of winter. Heat will be drawn from the interior of the earth by artesian wells, or generated by the friction of metallic plates driven by wind-power.

No progress has as yet been made in directions apparently so desirable, and until we discover a scientific departure toward such results, we are compelled to pass these conjectures by as purely visionary. Man does, indeed, do wonderful things, but usually in unlooked-for ways, while the prophets are gaping in a different direction. While, for example, Fourier is looking for anti-whales to draw our ships in calms, the contemptible jet of steam from a boiling tea-pot is made to draw the ships, and there is no use for the mythic whales except to lash the foam of visionary speculation.

The music of the meteorological elements is full of discord and broken measure, but man has had no choice but dance to it, and dance to it he must with little assurance of its improvement in harmony.

CHAPTER XXIX.

ORIGIN AND CONFLICT OF NATURAL LAWS.

SECTION 191.—A prevailing idea concerning the natural laws is that they were created by the fiat of the Almighty. This is a modern application by survival of somewhat primitive ideas, and involves the mental confusion common to such survival. It assumes that natural laws, like statute laws, have been created, and are executed by some conscious and competent authority. Natural law, however, is but the orderly succession of phenomena, the invariable sequence of cause and effect, the uniformity of proceeding in nature. We refer all phenomena to the action of forces, and the idea of an outside and arbitrary power enacting laws for the government of such action, is foreign and offensive to scientific habits of thought. This action must take place in a uniform manner, because such action is conditioned by the inherent and essential nature of the forces, and there is no other way in which they can act. Given the existence of the forces of determinate character, and their action must be invariable and sequent ;—there is, consequently, but one possible universe, and that is the one we have. [Diodorus, the stoic (according to Cicero), Abelard, Wicliffe, Thomas Aquinas, Hobbes, and William Godwin held that nothing is possible except that which actually takes place]. It is convenient to speak of this action by regular sequence, as natural law ; it is an example of the figurative use of words, which gains currency from its aptness, and maintains its place on the sufficient warrant of mental habit.

A different school of philosophers hold that these laws are eternal. This opinion, without qualification, is less plausible than that of creation. The conception of the eternity of natural

law posits a statical and uniform system of nature ; while all the developments of science compel us to regard nature as dynamical, and moving in cycles of change. Nature is a complex succession of actions. It is never precisely the same for two consecutive moments ; it is a continual development. New forms of action are constantly coming into existence, and these new forms of action have their fitting laws ; and the laws are no older than the forms of action.

Let us illustrate from a general view of the solar system. We have no choice but to shape considerations in the light of the nebular hypothesis. The quantity of its forces may be eternal in the sense that changes of form neither increase nor diminish them ; but the forms of their manifestation are not eternal. When our system was in the primitive condition of cosmical mist, we can conceive of but two forms of action besides those connected with light,—physical attraction and repulsion. Besides those which relate to light, the only laws then in existence in the system were the simple physical laws which govern attraction and repulsion in this primeval form. So far as there was movement by currents or masses, it could but have illustrated only the simplest laws of motion. Kepler's laws of planetary motion may have had a potential, but not an actual, existence, till planets were formed, and traveling in their orbits round the sun. The physical causes of light may have existed, but there was no light, since there was no eye on which those causes might act. There were no chemical laws till there had been sufficient radiation to permit chemical action to take place at the surface of the cooling mass. The law *is* the order of the action, and there can be no law of it till the action takes place. Physiological laws are now familiar enough ; but our planet had been coursing round the sun for millions of years before there were any such laws in existence. There could be no organic laws till there were living things. Mental laws could not ante-date the phenomena of mental action. There were no laws of society till they took form in the existence of society. So all along the pathway of evolution, new laws must have been coming into

existence, because new phenomenal divergences have been constantly taking form under the complicated interaction of the forces of nature.

SECTION 192.—This statement of origin, however, is only prefatory to a different phase of the subject, to which it is desired to call particular attention: the conflict of those laws, and the violence and discord which have attended them along the entire career of development from simple nebulous existence to that maze of complexity we call the world. As it is a figurative use of words to speak of natural law, so is it to speak of the conflict or crossing of natural laws. All that is meant is that an action or an order of sequences comes in conflict with another action or order of sequences, and one or the other suffers limitation, disarrangement, or interruption. These actions or successions of action belong to different categories: some are physical, some organic, some psychological, some social, etc. Conflict may take place within each division, as when physical sequences interfere with one another, or organic with organic; but the collision is quite apt to take place across the division lines, and it is in this feature of the phenomena that we are most interested in this connection. The interest clusters mainly about the organic within its own sphere, and where it touches on the physical and on the social and moral.

A law of nature is, of course, supreme in its own realm, else it would not be a law. Gravity is always directly as the mass, and inversely as the square of the distance. Under the action of gravity alone the surface of the sea would be smooth and even, but the action of winds interferes to lift it into waves. The winds are, of course, due mainly to the direct and indirect action of gravity on the atmosphere of unequal density; and all the disturbances which grow out of the relations of the land, the sea, and the air to one another, are chiefly due to the influence of the earth's gravity and the sun's heat on these related and unlike bodies. The succession of occurrences which might characterize the phenomena would be very different if these bodies had no mutual relations with one another; but, being so related, the

series of changes in one interferes with, and in many ways modifies, the series of changes in the others.

The magnet may take hold of objects and move them in a line directly opposite to that in which gravity acts, but this does not suspend the Newtonian law; the object only yields to the action of the stronger force affecting it for the time being. If the action of the magnet is cut off, the object yields to the pull of the earth's attraction and falls. The stronger force of the magnet acting in a contrary direction had interfered with and prevented the characteristic results of gravity. This interference of one force obeying its laws with the action of another force obeying its laws, is a common and necessary phenomenon in physical nature.

SECTION 193.—The union of carbon with oxygen has its laws, and is always accompanied with the evolution of heat. There are also laws of vital action, and if these be interfered with, the integrity of the organism is put in jeopardy. If the organism falls into the fire it is destroyed. The organic laws are not destroyed, nor are they ever suspended; there is no miracle performed, but in this particular instance the conditions of organic action are annulled, and such action can no longer take place. When these forms of action meet in a struggle for precedence, the physical law proves to be the stronger, and deprives the organic law of one of its subjects. Conflict between the physical and organic modes of action, with its accompanying violence of method and result, has had place on earth ever since the rise of organic forms. The plant cherished for beauty or use, the fruit-bud freighted with promise of its luscious product, may be cut off by an untimely frost, and sad disappointment carried to many an anxious worker. So striking an instance of defeat by the action of natural causes, and indeed so common, has afforded to the antagonists of natural theology the occasion to insist that the course of nature is as likely to suggest an overruling power in the interest of malevolence as in that of beneficence.—(Alexander Campbell, W. H. Mallock, and others). This was no doubt the prevailing impression among

primitive men. From the scientific point of view, however, it is only the collision of one train of sequences with another, in which the conditions of vegetable existence are disturbed, and the functions of plant life greatly disordered or irretrievably wrecked. The hot ashes and lava which pour forth from volcanoes; the sudden shock of earthquakes; protracted drought and parching of the soil; the flood; the fury of the winds; unseasonable cold and the blight of frosts,—these are forms of violence from which life has always suffered. Plants, fruits, fishes, insects, birds, beasts, have perished by millions from the play of the natural forces in implicit obedience to the laws of their action. It is no far-fetched figure of speech to say that these millions have perished by the clashing of the physical and organic laws. When man came into existence, higher forms of action were presented in his constitution to the lower forms of action, on the general arena of conflict. The history of catastrophes, or the conflict of different modes of activity within and on the earth, shows how man has been the victim, often literally ground to pieces between the upper and nether millstones of conflicting agencies.

Within the realm of the organic there is this same infringement of one activity on the domain of another. One class of creatures is formed by structure and instinct to prey upon other creatures, and it could not subsist but for the exercise of this function. Tooth and claw are formed for this particular purpose. The rule of life for the eater is the rule of death for the eaten. Almost innumerable forms of parasites live at the expense of other organisms. The vital functions of organic forms are thus cruelly interfered with, and often terminated, by other organisms in the legitimate exercise of their vital powers. It is hardly longer to be doubted that many diseases are due solely to the invasion of the system by microscopic forms. And, inasmuch as the early and lower forms of living things which were exposed to physical violence suffered less than do the later and higher forms, so must the same be true when the torture is inflicted by one living form upon another. Not only does man, owing to

his higher organization, suffer more than the lower creatures from such causes, but he suffers from causes which do not affect these lower forms. Vegetables flourish in an atmosphere which is poisonous to animals, and beasts are exempt from injury where the higher races of men cannot live. It is no doubt true that the more complex and refined the organism is, the more exposed is it to the causes which interfere with the harmony of organic action; and influences affect it deleteriously which do not affect the lower organisms at all. Parasitic life is more apt to fasten on it, and work out its manifold forms of organic disturbance. The seeds of disease in countless variety, which float in the atmosphere and pass the lower animals by, seize upon man, and generate organic disturbance to the weakening, often to the destruction of life. The conflict between these different forms of action loyally obedient to their own laws (if the tautology be allowed), results in greater pain, the higher existence on earth rises in the organic scale. The greater the diversity of forms of action, or laws of existence, the greater the liability of danger to the higher forms.

SECTION 194.—By the use of a harmless figure, it may be said that the individual has its laws, and the race, of which the individual is but a part, has its laws, and that the two very often come in conflict. It has been remarked that nature cares very little for individuals, but everything for the race. The individual is often sacrificed for the good of its kind. This is common among the lower animals, where, through various causes, the feeble are cut off and the stronger conserved. However cruel this may seem to the individual, it preserves the vigor of the race, and it is the only way, under the system of nature, in which it can be preserved. Cruel as it seems, it is the only means of securing the minimum of suffering and the maximum of enjoyment. The same thing takes place among mankind through competition and antagonism. Among some of the lower human races, the old and the feeble among the young are helped out of the way. And then among the most civilized peoples known, those who have been thrown by competition into the pauper

class and not cared for by the nursing hand of philanthropy, suffer from a high rate of mortality. The deformed and enfeebled, it may be for no fault of their own, are necessarily cut off from many of the social gratifications of a healthy and natural life ; and so far as this prevents the entailing of these defects on offspring, the race gains by the deprivation of certain of its members, and thus are the highest interests of society subserved by seeming injustice to individuals. There are two kinds of superiority to be noted here : That which is quite purely physical, and that of cultivated intellect, which gives power in civilization. Both are conserved to society by the selecting process under competition ; for as the vigor of the so-called upper classes becomes exhausted, it is replenished by constant accessions from the middle classes, with vigor of body as the basis for the highest display of mental prowess. Individuals may be the victims of an adverse fate ; but society maintains the even tenor of its way, in pursuit of the maximum of enjoyment with the minimum of suffering.

This same process of selection through conflict goes on between races. It may seem a cruel thing, that of exterminating one race to make room for another ; but it is the plan of nature, and has been going on ever since races began. The geological record shows how it has been with species ; history shows how it has been with human races. It might be supposed that the finer feeling which civilization has developed in the human heart would conserve, if possible, the inferior races, however much in the way of the spread of the higher, and philanthropic people are busy with this problem, but so far with apparently no result. The discordance of contact between some of the lower and higher races appears to be such that there is no assured safety for the lower. Their rights may be held to be sacred, but it seems to be a prevailing principle, a higher law, whatever its questionable means, and whatever the cruelty it involves, that the human races which are strongest for the conflict, whether the highest or not, shall crush out the feeble and occupy the earth.

In like manner, when it comes to the higher forms of human society, the individual, without fault of his own, often suffers from the prevalence of a practical rule of conduct which is regarded as indispensable to the constitution of society. Thus personal freedom involves the right of life, liberty, and the pursuit of happiness to the extent of one's ability, observing the rules of equity; and such pursuit implies free competition in all the vocations of life, through which some unfortunately sink into indigence and misery. The individual may suffer a fate which appears to be tainted with injustice, under the action of a general principle which is almost universally extolled as fair and desirable. The comforts of civilized life are only procured through the production of labor, and it is to the interest of society in all possible ways to add to the facilities of such production. This is done mainly by accumulating the surplus products of labor and utilizing invention; but these things cannot be done under our system of personal liberty and free competition without individual suffering, from the disuse of old occupations, change of industries, and loss of employment. What is for the general good does not hesitate because of its bad effects on particular individuals. In like manner an institution which is necessary for the general welfare may, in its operations, bear down the natural rights of the individual, in exceptional, it is true, but unavoidable, instances. Maternity is a natural, and it may be almost a sacred right; but what seems here to be the law of the individual is, in many instances in practical life, broken as a frail reed by the necessary working of an institution which must be conserved for the general good. As nature cares little for individuals but much for races, so does society care little for individuals but mainly for institutions. The general everywhere overrides the particular.

SECTION 195.—First law: Migration should be free for the oppressed and over-crowded of all nations. The violation of this law would be despotism, an infringement of one of the most important rights of freedom; therefore, is the law one which is supported by high moral considerations. Second law:

In the contest of races for room on earth, the fittest prevail. But the fittest are not always the highest, especially in industrial conflicts, such as are becoming more pronounced as civilization advances. A psychologically low race may crowd out a higher race. The Chinese may crowd out the Teuton, or abase him, under civil protection. If the first law be observed, the action of the second law may result in degradation among the people, by the more rapid multiplication and stingy living of the lower people or race. If the first law be violated by the arbitrary exclusion of such lower race from the privileges of immigration, the type of society may be sustained on a higher psychological level. Here we have degradation by the observance of a higher law, and the avoidance of degradation by the violation of said law. The contradiction here appears in the character of the law and its consequences, the law being good and its consequences not good. Hence we very naturally have two parties on the question of Chinese immigration. One party takes position on *a priori* moral grounds and says: Let immigration be free whatever the apprehension about its consequences,—the law is right and the results cannot be wrong. The other intrenches itself behind *a posteriori* considerations, and declares that the bad consequences of such immigration condemns the assumed morality of the law which would permit it. The former is the view of abstract moralists, the latter of practical statesmen.

Another example may be given. It is a high moral law that the guilty alone should suffer for crime, and that the innocent should not so suffer. But the innocent are so made to suffer in many ways, and that, too, by an inexorable necessity in the nature of things. The people of a civilized community are so bound together in one, that the transgressions of any are painfully felt by fellow-members of said community. Wrongs against property and person are suffered by the innocent, and the prompt punishment of the offenders even does not and cannot make proper amends for the suffering. So, the transgression of parents may affect their children for generations to come. This hap-

pens in the social as well as in the physiological sphere. The abasement of the parents is entailed upon the children. This seems a very cruel thing in the constitution of human society; but the physiological laws and the social laws will not abate one jot or tittle of their claims, however apparently cruel, to spare the integrity of the moral law that each should suffer only for his own sins.

There are two kinds of philanthropy: One is microscopic, and sees only the isolated cases of suffering, without perceiving their relation to causes; the other is comprehensive, and generalizes all forms of suffering in relation to their causes, and considers them with reference, not only to the special means of curing single cases, but to the general means of mitigation and prevention. The one is the impulse simply, the other is the impulse informed and directed by intellect. The measures of the impulse simply may be very different from the measures of a broader philanthropy, and the two are very often not well calculated to work together. The law of the one is often in conflict with the law of the other. As we have seen (Chap. XII.), the entire system of morality is based on conflict between lower and higher sentiments. The one consults only selfish and immediate gratification; the other takes a more comprehensive view, and considers what is due to others, accepts only what is compatible with general interests, and thus, with present loss, secures more in the end than could otherwise be had. On a like principle, it very often happens that in giving immediate relief to some kinds of deprivation, evil habits are fostered, and the suffering therefrom made greater. Some who have spent the greater part of their lives in conscientious endeavor to relieve suffering, have found at last that they have encouraged, and rather increased than reduced, the evils they deplored. A philanthropic lady said: "I have been spending my life in creating paupers; and I am done."—(Savage, *Morals of Evolution*).

If this view of the conflict of laws be correct, then Hooker's death-bed meditation on the perfect obedience of angels to law, assumes an impossible condition, so far as known to our

experience. Still, if we must concede that the angels might in their sphere render such obedience, yet surely man could not in his, since obedience to one law is sometimes outright disobedience to another.

The cases above given are only briefly-stated examples of the many like instances which find place in the manifold operations of that complex thing which we know as society. Some of these examples will be more fully stated in succeeding chapters, wherein the fact of the conflict of natural laws will receive additional confirmation.

PART SIXTH.

THE OUTLOOK, SOCIAL AND MORAL.

CHAPTER XXX.

SANITARY CONDITIONS.

SECTION 196.—With the progress of science and agriculture there is improvement in some respects in sanitary conditions. By thorough drainage the mischief from malaria is greatly abated, if not entirely prevented, in some localities. In others it is modified, at least, by the same means. The drawback is that, with the disappearance of one form of disease, another usually appears. In this way the ague of a new country, not by any means malignant, but affecting the system with a good deal of disturbance, gives way, as the country improves, to fevers of stubborn character, and singularly enough, to consumption as a prevailing disease. But while this is true of some localities, there are others in which it seems impossible to get rid of malaria. This is generally the case along streams. The channels may be open and the water flow freely, but fogs rise and extend far out on either side, floating disease to the people. The marshes which skirt large bodies of water impart the seeds of

disease even more fatally; and little progress has been made so far in getting rid of this source of atmospheric impurity. Some marshes and swamps may be drained, and others may be filled up; but it is difficult to make the work permanent. The silting up of river mouths and the elevation of river beds cause the overflow of banks, and change arable lands into pestilential swamps. The rising of a shore line may lift swampy regions into dry land, but other regions, equally the source of pestilence, may come to the surface. By the sinking of the shore an existing marsh may go under the waves, but a new one is liable to be formed of land that was formerly dry; so that there appears to be no remedy for this source of disease so long as the land, as in all times past, keeps rising and sinking, except at an enormous cost of labor for filling up or dredging out; and such remedy may not, under all circumstances, be practicable, whatever the industrial strength of the people. There were marshes in Italy, near Rome, three thousand years ago; and there are still marshes there, sending their pestilential effluvia into the streets of the "Eternal City," and endangering the health of "God's vicegerent on earth." That this should be the sanitary condition of what was once the great power which ruled the world, is not in keeping with prevalent optimistic prejudices; and the eucalyptus now planted to reduce the poison of this region may not have all the efficacy that is hoped for. While I write, the statement is made on competent authority, that the old historical island of Cyprus, recently acquired by England, is incurably unhealthy. Civilization must get rid of these sources of disease, still so common in all countries of the world, before it can hope for much from the pestilential regions of a country like that of Africa. There is not the least clue yet to the solution of this problem. Nothing yet points to the tropical regions of the earth as the fitting abode of finely cultured human beings in a high order of society. The climate is relaxing to both body and mind, favoring mainly the development of indolence, sensuality, and passion. There is no warrant for the dream of a highly organized, healthy, and hap-

py people covering all the face of the earth with life that is a continual jubilee.

SECTION 197.—But whatever the drawbacks, the results show that improvement has been made in some respects in the sanitary environment of civilized man. Plagues are not so apt to afflict particular peoples, and epidemics do not assume the virulence they once did. This is due in part to improved medical practice, in part to better nourishment, cleaner habits, and better lighted and ventilated houses. These changes for the better are the result of greater intelligence and greater care for human well-being. Quite the same is true of famines. Formerly, they were frequent and terrible; but now, owing mainly to the facilities of commerce, by which products are more quickly and widely distributed among peoples having commercial relations, destitution is less frequent and less fatal than formerly. Still it will not do to overlook the great famines of modern times, in regions accessible to the commerce of the world. Witness the rapidity with which famines have followed one another in India, in the very face of the most triumphant of all civilizations. In the midst of our greatest achievements we are compelled humbly to acknowledge what appears, all things considered, to be irremediable failure.

Under the appliances of civilization for the bettering of man's conditions, the death rate was, for many generations, gradually reduced—the average of longevity rising. Yet within the last half century a reverse tendency has set in, and the death rate is rising. With all our science, all our hygienic precaution, all our medical skill, the average of life appears to be less than it was two generations since. We need not go far to find the principal cause of this adverse tendency. It is in the increasing density of population under the stimulus of modern industries and the building up of great cities. "Excluding the London districts, about which there is some difficulty, we have seven groups of districts where the mortality ranges thus: 17, 19, 22, 25, 28, 32, and 39. In the same districts the numbers of persons to a square mile are: 166, 186, 379, 1,718, 4,499, 12,357,

65,283."—(Brassey, Foreign Work and English Wages). Doctors Farr and Lankester, and others, by means of carefully collected statistics, have shown such an intimate relation between the rate of mortality and the density of population, that the one becomes a very accurate measure of the other. And this is a cause of human suffering not easy to remedy. While better homes for the poor may be provided, and greater general intelligence may care more effectually for the health of the people, it is scarcely possible to avoid even greater concentration of population in the future than that which now exists. Much, no doubt, may be done for the health of cities, but people cannot be prevented from flocking to them; and the puzzle of philanthropy to get rid of the accompanying evils, or even to palliate them, is likely to become even more perplexing than at present.

SECTION 198.—But even the sanitary work done through all the appliances of medicine and hygiene, though on the whole a good, which we are glad to accept, is nevertheless alloyed with its inevitable taint of evil. There is a good and a not-good bound up together in the results of the skill which conserves the feeble. In the rough life of former times, the principle of physical selection had fuller sway than at present, and through its action, only the physically vigorous were able to survive. This maintained the vigor of peoples, and even made those races as "hard and tough as steel," which now hold the front rank of civilization. Under the incoming system of things, the tendency appears to be to conserve the intellectually, rather than the physically, favored. Those may survive who know how to avoid the breakers, and not those merely who have strength to buffet them. But there is complication, even here, with the fact that those who are willing to avail themselves of the requisite sanitary knowledge, are not always able to do as they wish, while many who know better will persist in following the vicious fashions which set such knowledge at defiance. Still, an effect of improved medicine and hygiene is to preserve the feeble. "There is little doubt that the survival of the weak and helpless, and the sustentation of the unfit and the vicious, are begin-

ning to poison the blood and paralyze the energy of the race." (Prof. J. LeConte, in *Popular Science Monthly*). "During the more primitive phases of civilization, those of weak and defective blood were more liable to be swept into an untimely grave than they are to-day. Now all such are skilfully nursed up to the fertile period, to the multiplication and perpetuation of their kind."—(Dr. J. R. Black, *Popular Science Monthly*). Following Greg, Wallace, and Galton, Darwin says: "With savages, the weak in body or mind are soon eliminated; and those that survive commonly exhibit a vigorous state of health. We civilized men, on the other hand, do our utmost to check the process of elimination; we build asylums for the imbecile, the maimed and the sick; we institute poor laws; and our medical men exert their utmost skill to save the life of every one to the last moment. There is reason to believe that vaccination has preserved thousands, who from a weak constitution would formerly have succumbed to small-pox. Thus the weak members of civilized societies propagate their kind. No one who has attended to the breeding of domestic animals will doubt that this must be highly injurious to the race of man. It is surprising how soon a want of care, or care wrongly directed, leads to the degeneration of a domestic race; but excepting in the case of man himself, hardly anyone is so ignorant as to allow his worst animals to breed."—(*Descent of Man* I., 161-2). It is not a good thus to reduce the average physical vigor of civilized peoples. There is, then, an additional need in this direction, which is that the feeble thus preserved shall be made by similar means to leave successors who have greater physical stamina than themselves. The course of civilization as yet shows no sign of a general movement in this direction. It points rather to the decline, on the whole, of those who have the best opportunity thus to conserve the feeble, and the taking of their places through the more rapid multiplication of the sturdy lower classes, where physical selection still has a considerable part to play.

The immunity from labor, which the possession of wealth brings, is favoring the increase of an indolent class of people

who grow weak in body, and, eventually, weak in mind. It threatens to bring upon us a train of evils which have always followed, sooner or later, in the wake of slavery. It is debauching its victims mentally, morally, and physically. The extravagance of fashion in dress which wealth displays, is often directly unfavorable to health, while extravagance in this and all the other vanities of life becomes the envy of people with less means for gratification, and their life is a continual worry, depressing the mind, and exhausting the body, in a mad struggle for means to ape their superiors in the ranks of fashion. We have reformers, of course, who are laboring against these tendencies, but so far their efforts appear to have no favorable result, and an idle and fashion-nursing aristocracy on the one hand, and their slavish imitators on the other, with deterioration in both, are everywhere noticeable features of our progressive civilization. When we compare the physical frailty of women who can afford to live fine with the robustness of women in the lower classes who live plain and work in the field, there is little encouragement for the optimistic fancy that the means of conserving the feeble are also imparting vigor of constitution. Frances Power Cobbe (in *Contemporary Review*) observes: "One of the exasperating things about this evil of female valetudinarianism is, that the women who are its victims, are precisely the human beings who, of our whole mortal race, seem naturally most exempt from physical want or danger, and *ought* to have enjoyed immunity from disease or pain of any kind. Such ladies have probably never, from their birth, been exposed to hardship, or toil, or ill-ventilation, or bad or scanty food, fuel, or raiment. They have fed on the fatness of the earth, and been clothed in purple and fine linen." There is nothing effectually to counteract the deleterious effects of dress, fashion, and dissipation. There is reason to apprehend that increasing intelligence and opportunity are adding to the aggregate of physical debility, with little prospect of adequate compensation in kind, unless, indeed, this is to be found in the mere extension of an enfeebled existence.

SECTION 199.—But while the hygiene of advanced civilization is impotent to invigorate the feeble whom it conserves, the very tenor and tendency of civilized life and industry are still further to enfeeble. While, in the early periods of human existence, hunting and war, pastoral life and agriculture, were full of hardship and exposure, which cut down the feeble, they were, nevertheless, healthy, and promoted the vigor of the survivors. In modern life the hardship is only partially got rid of, while new forms of repulsive occupation have been added to the list of industries. Mining in the dark, damp caverns of the earth is an ever enlarging example of the kind. Still more than in Seneca's time do men dig mid "hideous caves, hollow and hanging rocks, horrid rivers, dead and perpetual darkness, and not without the apprehension of hell itself." Hell itself truly in a sense! An occupation like this may overcome the feeble, but there is little in it to impart robustness of constitution to survivors. The breathing of air heavy with carbonic acid poisons the blood; and without the invigorating influence of the direct rays of the sun, physical vigor could hardly, under any circumstances, be maintained from generation to generation. To this must be added a long list of occupations growing out of the use of machinery, which are vitiating both to body and mind. In the manufacturing districts of France and England there is falling off in stature as well as in constitutional vigor. The effect of machinery is to lighten labor, but, at the same time, to make it more unhealthy. The division of labor, so necessary a part of advanced industry, in confining the mind of the operative to but one thing, never diversifies his inventive resources, but habituates his industrial life and mental operations to monotony, and makes of the individual an automatic machine, without incentive or help to the symmetrical development of body and mind. Industrial monotony may, indeed, favor insanity, as has been alleged (Griesinger quoted by Royce); but, however this may be, it certainly does favor stupidity, and tends in the direction of dwarfed mentality and drivelling idiocy. Add to this the heated and close atmosphere necessary in some occupations, and the dust and effluvia

which cannot be avoided in others, and we readily perceive that civilization is not contributing in all directions to an equilibrium between man and his environment on the basis of a sound mind and a sound body.

Under the influence of education and the use of machinery, the tendency from occupations requiring both mental and muscular exertion to those which become either physically automatic, without mental activity, or purely mental, without muscular activity, is attended in the different classes with a complication of undesirable results. That form of the division of labor which is divorcing the two activities of mind and body, is doing injury in defiance of the increase of general intelligence and of special knowledge, to the integrality of the individual constitution. While the routine work of the mill allows the mind to become listless and inert, only a small part of the muscles are called into action, and the rest become dwarfed by disuse, the general health suffering for the want of general activity and interest. And while the brain-labor which pertains to numerous branches of commercial and intellectual life, permits the muscles to become dwarfed, it at the same time worries and overtaxes the brain. The greater strain upon the nervous system is a prevailing feature of the tendency of occupation from a lower to a higher form of civilization; and with it the types of disease are undergoing change. Cerebral and nervous diseases are on the increase. Among civilized peoples there is more sensibility, more suppressed emotion, more mental suffering, more hysteria, more hypochondria, more insanity, more self-destruction.

Insanity is not known among primitive people; it is a disease of civilization, and is one of the most fearful, and, so far from any abatement under the progress of science, the percentage of insanity might be used as a gauge of civilization, the one increasing with the other. Notwithstanding the progress of medical science, it fails to overtake disease of the human brain. "We seem to do less for the chronic insane now than fifty years ago, and diseases of the mind seem more and more relapsable; hidden, treacherous, recurring forms of disease are springing up

everywhere, to the confounding both of science and law."—(Dr. George M. Beard, *N. A. Review*, Sep., 1880.)

Suicide is also becoming more common. Professor Morselli, of Milan, who has studied this subject more profoundly, perhaps, than any living man, presents statistics showing that for the current century the increase of suicides in Europe has been greater than the increase of population. It prevails most in the most civilized countries, and is usually most prevalent in cities, the centers of civilization; but it is extending over the country like a contagion. Paris, long regarded as the center of refined civilization, suffers most from the suicidal propensity, and its neighborhood partakes of its own bad eminence. Wherever education is carried highest, there is the most self-destruction, so that the number and efficiency of the great schools and the abundance of periodical literature, correspond with the prevalence of suicide. Prussia in general, and Saxony in particular, are eminent in this respect among the countries of Europe; and everywhere the educated classes suffer more than the rude and uncultured. It is painful to be compelled to face the sad showing that culture and suicide are correlative facts in the progress of civilization. It was so in ancient Greece and Rome. Suicide was most prevalent when these civilizations were at their best. The inequality of classes, the struggle to rise, the failures, the pressure of want or some deprivation of what is dearly coveted, together with undue sensitiveness, all lead to despair, to the unbalancing of the mind, to self-destruction. Even the terrors of the prevailing dogmas in the church appear to exercise no more restraint over the suicidal propensity in the Christian world, than did the license of the pagan creed in the old Greek and Roman worlds. A religious authority refers the annual thousands of suicides in Europe to the general decline of faith. If this were so, the Jewish faith would be more desirable than the Catholic, and the Catholic more desirable than the Protestant, for Jews commit suicide less than Catholics, and Catholics less than Protestants. Rather is the growth of suicide due to the

instability of social conditions, the opportunity for change, and the intense competition in the struggles of life.

The more complicated a machine is the more liable is it to get out of order ; the same is true of mind ; and the human mind has become more complicated in structure and sensitive in action under the educational influences of modern civilization. It is the result of multiplied activity in all the spheres of life ; and then the continued intensification of this same activity often proves to be too heavy a tax, and the mind succumbs in mania or suicide, or both. The evils grow out of the intense and diversified struggle between competitors in all the functions of industrial, social, and political life. Then what is the remedy ? Nothing short of the removal of the cause. There may be some palliation, but no radical cure except by the stilling of these activities ; but this would defeat the glorious ends of civilization ; hence, while these activities continue, there will be struggle, exhaustion, and defeat, and the path of our triumphant progress will "be inundated with the tears and blood of mankind."

Nothing, perhaps, so luridly pictures the dark side of civilization as this increasing army of self-destroyers. It is not simply the fact that thousands every year make away with themselves that alone counts. This is only the index to misery truly beyond the reach of estimate. The suicide must feel that life embodies for him more of pain than of happiness, and that the overbalance on the side of misery is large enough to warrant the painful undertaking of self-destruction. And then, for every one that reaches this crisis how many must there be, who, in moments of despair and outrage, think of suicide as an alternative which might tell for happiness by closing up once for all the fountains of pain,—and yet of which gloomy deliberations, for stopping short of the fatal act, the world never hears ? But, does this condemn civilization ? By no means. The highs are forever equal to the depths. Even when so many sink to the very depths of sorrow, a still larger proportion may rise to corresponding elevation of enjoyment. The anguish of the defeated

in life may be more than compensated by the joyfulness of the victors. It is the richness of the opportunity that develops the extremes. It is the peculiar province of civilization to lengthen out the emotional scale; and we may be sure that the readings of this scale can not fall further below the zero of happiness than they rise above it. The point we make is that, if they rise higher above this zero, they must fall farther below.

SECTION 200.—If it were only the fathers who suffer from the general causes of weakness and degradation, there would be less to deplore, but the mothers are becoming deeply involved. And this is so, not only in the manufacturing districts where girls form a large part of the operatives, but it is only too prevalent in agricultural districts; and the mothers in most classes of society have become thus entangled in the meshes of a deterioration which threatens to become constitutional and hereditary. Galton observes that, "Our race is overweighted, and likely to be drudged into degeneracy, by demands that exceed its powers." It is bad enough now, as we might give page after page of testimony to prove, but with greater intelligence and opportunity as the stimulus of greater competition under greater industrial pressure, it is likely to become still worse with the progress of civilization. The idle on the one hand, indulging in vicious fashions and the dissipation of high life, and the overworked on the other, afford little ground, indeed, for great expectations of the future.

Sufficient has been stated to indicate that, so far as health of mind and body is concerned, while civilized peoples are gaining on one side, they are losing on the other. But these unhealthy and exhausting occupations bring us more of civilized plenty, so much our boast; and they are likely to be increased rather than diminished. If we get more in the aggregate at the cost of life, life itself must be given up. From the healthy hills of the country come annually hecatombs to be sacrificed on the altars of civilization. This is costly; but still we pay the price. As the blessings of the gods were once to be had only by lavish

sacrifices on their altars, so, now, are the boasted blessings of civilization to be secured only by the sacrifice of human beings on the altars of industry and plenty.

CHAPTER XXXI.

PROSPECTS OF THE COMMON, WORKING PEOPLE.

SECTION 201.—While machinery greatly increases the quantity of production, it fails to reduce the amount of labor. The limits of the demand appear to be determined for the most part by the extent of the supply. A greater abundance of products from the same amount of labor means more generous living for a larger proportion of the people, usually with reduction of the death-rate among the laboring classes, and consequent encouragement to their rapid increase of numbers. And if population should not in every instance keep pace with production, the increase and diversification of human wants will. In all the changes which civilization has effected, there has been so far no general and permanent relaxation in the demand for products, and the laborer is driven as remorselessly as he ever was. The continued complication of industries starts new occupations into existence, some of which are not only unhealthy, but repulsive. But even if there were no additions to the repugnant character of labor in general, the fact of ineradicable repugnance in certain industries, is a difficult one to deal with in Utopian speculations. The difficulty still holds, whether the “hewers of wood and drawers of water” shall always be a class, or whether it shall become the duty of all to take part in such necessary labor as is intrinsically repulsive. This alternative is so little probable that it may be dismissed without further consideration. Whatever

the form of human society on earth, it is not likely that every one will be called on to take a hand in the most repulsive of necessary industries. In what form, then, is relief to come to that great class of our fellows who do the hard and disagreeable labor of life? "Pay them better in the first place."

Very well; admit the feasibility of this, and that society will see justice done to the poor worker. Let us double his wages. As it is now, we will admit, he can get but a bare subsistence, not the best food, or the best clothing, with only a small jug of whiskey on pay days and holidays—such jug being the symbol of dissipation. With twice as much to do with he may live better and go better clothed: so far good; but he will be more likely to indulge in idle days, days of dissipation; that is, he will have a bigger jug for whiskey. "But, you talk nonsense; educate him, educate him above such dissipation and selfishness."

Very well, let him be educated. We hope it may be his good fortune to be educated above the follies now so common in his class. If this were possible would it be an unalloyed good? Just as soon as we educate these workers of civilization, we make them more dissatisfied than ever with their condition, even with all the ameliorations of which that condition is susceptible. You cannot educate and refine the worker without making him feel more exquisitely the repulsiveness of his coarse and uncouth occupation. Even if civilization does nothing to make certain labors *per se* more repulsive, it makes them relatively so by refining the tastes of the laborer. The good cannot be had without the evil. The working people of the world have appeared to be in the happiest frame of mind, when they had good health and steady occupation as the condition of a fair supply of the necessities of life, and little or no surplus to stimulate dissipation. The need of working steadily for ends which are directly perceived and warmly appreciated, without the thoughts of an alternative that would be easier, establishes individual habit and the common sentiment of a class, with perhaps the greatest possible contentment in life. These people can only better their condition through the power which education may

give; but with education come new wants, and with new wants, a discontent which was unknown before. This fact was clearly perceived by that audacious writer, Mandeville, and stated in his blunt way as follows: "To make the society and people easy under the meanest circumstances, it is requisite that great numbers of them should be ignorant as well as poor. Knowledge both enlarges and multiplies our desires, and the fewer things a man wishes for, the more easily his necessities may be supplied. The welfare and felicity, therefore, of every State and kingdom, require that the knowledge of the working poor should be confined within the verge of their occupations, and never extended (as to things visible) beyond what relates to their calling. The more a shepherd, a ploughman, or any other peasant, knows of the world, and the things that are foreign to his labor or employment, the less fit he will be to go through the fatigues and hardships of it with cheerfulness and content."—(*Fable of the Bees*, 179). It does not follow from this view that it is not best to educate the worker as far as possible; but it does follow that we cannot bring him knowledge without bringing him pain. Contentment may not, indeed, be the greatest of blessings. It is a paradox in favor with agitators that contentment may be the basis on which misery rests. Lassalle found the working classes in general so insensible to their indigence, that he said the first thing to be done was to teach them their misery (Rae).

SECTION 202.—Laborers are, of course, not all alike in respect to saving wages. There is a great difference, for example, in this country between Celts and Teutons in their mode of applying economic principles to practical life; and American employes have been, and for a good reason continue to be, largely Celtic. Much the same may be said of the African element in our population; while the laborer with more Teuton blood in his veins, whether from Germany, Scotland, or the north of Ireland, is more given to save his earnings, and as soon as he can to become his own employer, and by and by the employer of others. Very promptly and steadily the Germans and Scotch-Irish take their place in the ranks of the much abused "oppres-

sors of labor." It is rarely so with the purer Celt, who begins a laborer and ends a laborer, and transmits the habit to his children.

It makes all the difference in the world whether people save or not. Neither are employers or laborers a fixed caste. They often exchange places, employers becoming laborers, and laborers becoming employers. By what process does this take place? The laborer who saves may become an employer, and the employer who spends more than he gets may become a laborer. And whether a man shall be one or the other depends largely on his industry, his prudence, his saving, his careful investment. The strong push their way upward, the weak are crowded downward; and there may be faults in the system under which this takes place, but with freedom of opportunity and fair competition, there will be inequality of condition; such is the difference in people. This appears to be the result of conditions which cannot be set aside.

Economists tell us that the liberal reward of labor encourages and stimulates thrift. That depends altogether on who the laborer is. A surplus of earnings stimulates extravagance and dissipation as well. This was very noticeable in the "good times" after our great war. The readiness with which laborers found employment at high wages afforded a great opportunity for them to get a good start in the world, but only a small percentage of them improved it. Instead of thrift, fast living became the fashion of all classes; and if the means were not at command to-day, to-morrow was confidently drawn upon, for the gratification must be had, and self-denial was rapidly passing out of the category of virtues. Only the discipline of "hard times" with its limitations, could arrest this reckless spendthrift tendency.

In 1860 Irish laborers in American mines received 87½ cents a day; in 1872, \$2; 1873, \$2.25; yet "it was believed that the men saved more when paid at the rate of 87½ cents a day than they did when the great rise in their wages had taken place."—(Brassey). The like held true in England. Mundella, quoted

by Brassey, says: "While expressing my belief that much that has been said has been unnecessarily severe, and, in some instances, grossly unjust, it is impossible to deny that the high wages earned in the coal and iron trades, during the late period of inflation, have added little to the material or moral well-being of many of the workers in these branches of industry." And Greg observes: "Nor are the artisans and operatives to be condemned because in such a time of glowing sunshine they insisted on sharing in the warmth, and forced up their wages to perhaps an extravagant degree. Where both parties were alike, if not equally, to blame was, not that they made hay while the sun was shining, but that the hay, instead of being laid up for winter seasons, was consumed as fast as it was harvested."—(Nineteenth Century, May, 1879). Florence Nightingale, too, affirms: "I could point to a town in England where men can earn wages of ten shillings a day, and drink it all away. Aye, and the women, too. A woman said, 'I think no more of my money than of a flea in a churchyard.' They are not a penny the better for it, either in clothes, lodging, bedding, or any of the decencies, comforts, or true interests of life."—(Nineteenth Century).

Higher wages alone will not lift the laborer up; nor will reduced hours, nor both together. The leisure secured by reduced labor-time may be misused precisely as the surplus of earnings is misused. The one may be expended on the vanities of life for low forms of gratification; the other may be misused just so, and generally is so misused whenever the laborer has been blessed with such leisure. The wise will use such advantages for the promotion of their well-being; the unwise will misuse them for the aggravation of their ill-being. Individual character will tell, whatever the conditions of life. The very conditions of short hours and surplus earnings but help more rapidly to divide the two great classes of working people,—those who help themselves upward, and those who stay where they are or drift still lower. So far from education proving to be a remedy here, it appears to be the reverse. The educated

city clerk has not necessarily learned to economize, and usually the higher his salary the more he spends. Liberal pay does not of itself encourage saving, either with or without education. It but serves, as among the lower orders of workers, to divide them into the two classes, one of which saves, while the other lives up all from day to day. This view of the facts does not favor long hours and low wages by any means ; it only shows that short hours and high wages are not sufficient to help those who will not help themselves, and something else is required to save the improvident, both educated and uneducated, from their own follies.

SECTION 203.—While education, so generally looked to as the savior of the civilized world, may do good in the long run, it is liable at the same time to bring evils in its train, for which it is not easy in turn to find a remedy. The general drifting of population toward cities and towns already crowded, is not wholly due to the springing up of commerce and the mechanical industries. No sooner does the son of a farmer or mechanic get a little education beyond the simplest branches, than he thirsts for some occupation requiring less physical labor than he has been accustomed to. If he can only get a clerkship in village or city, he is happy. He now enjoys the comfort of that fine aristocratic feeling to be found only among people who do not work for a living. This is, of course, a vicious state of things, but how is it to be helped? If you educate the farmer's son, the carpenter's son, the miner's son, the scavenger's son, the operative's son, you must not expect them to stand the sun and the storm, the dingy cavern, the filth of the street, the dust of the mill, and the heat of the furnace, with the complacency of their parents and without an effort to escape. One of the evident results of current education is to throng the occupations which require little muscular and more mental labor with subjects who are too generally destitute of the qualifications necessary to success. The disappointment which springs from this excessive competition affords the incentive and opens the way to the finer sorts of crime against prop-

erty. Thus, if education should go to the diminution of the more violent forms of crime in the "lower walks" of life, its tendency is toward the increase of "gentlemen's crimes" in the higher walks of life. The impotency of our much vaunted education to fit youths for success and happiness in the necessary avocations of life, is coming to be acknowledged more and more. The schools deliver their wards to society malcultured for the duties which await them. This drifting through the halls of education from the manly industries to fancy occupations, which are hardly industries at all, is a symptom of this wrong tendency, so palpable that none can fail to see.

Attention has been frequently called to the deleterious influence of our book education in unfitting youth for the sterner duties of life. It is not in this country only that it obtains ; it is wherever the system of education is in vogue. We quote from an English writer, Professor Sylvanus P. Thompson : " And ought we then to be surprised if, in pursuance of the system we have deliberately marked out for the rising generation, we keep our future artisans, till they are fifteen or sixteen, employed in no other work than sitting at a desk to follow, pen in hand, the literary course of studies of our educational code, we discover that on arriving at that age they have lost the taste for manual work, and prefer to starve on a threadbare pittance, as clerks or book-keepers, rather than by the less exacting and more remunerative labor of their hands. At the present moment, this tendency to despise a life of honorable manual toil, in straining after a supposed gentility, would be truly pitiable, if the proportions it has attained did not awaken more serious apprehension." Of the children who leave the elementary schools of Paris, M. Salacis (quoted by Thompson) says : " These little bureaucrats, boys and girls, outlaws from real labor by no fault of their own, come naturally to the end of their school course with one fear before them—that of being forced to become workmen and workwomen ; but with one wish also, the boys to become clerks, the girls shopwomen."

Sincere efforts are not wanting to counteract this tendency,

but they appear to have little result. This apparently irrational drift of a gregarious feeling, which sets the fashion of escaping industry and the severer virtues with the progress of culture, has a cause for being so deep in human nature, that it seems to be quite beyond the reach of any corrective. But education we must have, and some kinds of education are better than others. We have plenty of educational doctors, with nostrums which are reputed to be infallible. Take, for example, the author of *Race Education*. He is an earnest writer and means well in every line of his book. More than that, his views of education are doubtless a great improvement on the usual methods. But while his educational regimen might prove fruitful of good results, it would fail utterly to accomplish all that he expects of it. At best it could only palliate. His potencies are imaginative and could not be brought down to the real. We can no more induce water to run up hill of its own accord in the moral, than in the physical, world. To accomplish any end there must be an efficient motive, and this cannot be supplied by theoretical means, but must come from out the actual attributes of human nature as it is. This adequate motive is the fulcrum of the Archimedean lever, and without it, it is not possible to move the world.

Let us illustrate: Mr. Royce's 'scheme of race education is to be made efficacious mainly by home influences; but how are these to be given the proper character and direction? It is the rule that as soon as a mother discovers that the family is well-to-do, she inculcates into her children's minds, by the subtlest of means, the prejudice that real industry is not high-toned, and they very soon learn to look down on labor. Others, not so well off, must needs follow this example in high life, and their children, too, must dawdle in order to be thoroughly respectable. The highest aim in life is that of conformity and display. Thus is established the spirit of a coterie, set, or caste, than which there is nothing mightier in society to coerce the lives of its members. The "higher" the education and the greater the civilization, the more vanity dominates; it dominates in the most

secret recesses of society, in the homes of the people and in the public places, in all the forces which mold the young spirit in all fields of youthful culture whence spring many of the bitter fruits of life. This home education cannot rise higher than its source; and as the brain of civilized woman appears to be growing smaller under some physiological necessity, rather than larger, as civilization advances (section 216), are we not met on the threshold of "race education" with impotencies which threaten forever to prevent its actualization? This is no groundless apprehension; every civilization of the world, so far, has confirmed it.

A picture of the women of society might be given from Ouida, but we forbear. It is no doubt overdrawn, and Ouida is reputed by some to be a "diseased author." But at any rate the picture lies in the direction of the tendencies of high life, and it is likely to become in the future even nearer the truth than at present. It might be a source of consolation to reflect that the jaded creatures of fashionable life do not make up the great body of women in the civilized world, if it were not that the absolute, if not the relative, number of this class is on the increase. The forces which are operating to this end are becoming constantly stronger and more wide spread with the extension of wealth and the leisure and display it supports. A lady witness may be quoted as follows: "In view of our yearly increasing wealth, and the perpetual additions which are thereby made to the idle and luxurious classes, every counter-check to corrupting frivolity is to be hailed as an element of salvation. It is this large amount of female energy run wild, disfranchized of the little active cares which formerly employed it, and having found no substitute for them but the daily round in the treadmill of pleasure, that is spreading a pernicious example at home, and lowering the character of our countrywomen abroad."—(Emily Pfeiffer, *Contemporary Review*, February, 1881). The pictures given by Tacitus and Suetonius of society in high life among the Romans, in the earlier days of the empire, when Rome was in the zenith of her power, ought to have great sug-

gestive value for us. No doubt the social degeneracy of our times is more covert and more polished—it is not so violently bad, but it is similar. It is a disease of civilization taking its modifications of type mainly from the idiosyncracies of patients. People cannot have over-plenty for a long time without running into those follies which eventually damn, and damn effectually. Evil will attend the coveted and secured good; and no system of morality or religion can prevent it. It does not matter how voluntarily the disease may seem to be brought on; it is none the less a fatality, coming by impulse and ending in ruin.

In view of the tendency of all high civilizations to develop social degeneracy in the leading classes, what is to be expected of home education directed by the mothers belonging to those classes? And this we must remember, that, even if these classes are comparatively small in numbers, they are yet weighty in influence, and are replenished continually from the ranks below, and kept more than full from this source. More than this, they are the fashion-lights set to be seen of all women. They get into the newspapers, reporters doing them in their garish best. The silk rustles, the gold glitters, the diamonds sparkle. The wearers become the envy of almost all their sex, in the ranks of the common, poorer, and better people; and if these had but one choice of a destiny to make in the world, they would choose to be like them. This is shown every day and almost everywhere, by the straining to ape the ways of people in “high social position.” This is where the danger most lurks, and it is this, more than anything else, that shows the amiable folly of looking to home influences for the higher education that is to exalt above the follies of life, and secure justice to those by whose labor the world subsists. The women who are really exemplary as women and mothers are comparatively so few, and their position in life so humble and obscure by the very necessity of their exalted character, that society does not look up to them, but rather affects to look down upon them. “Society” only “looks up” under the stimulus of the vanities, and this is fatal to the prevalence in society of a nobler type of womanhood as

the fountain of education; and there appears to be no remedy for this but through a revolution in human nature, for which there is no provision within the bounds of the possible.

The Greeks and Romans had education; but it is a plain fact of history that the educated sank deepest into the sloughs of social degeneracy. "But they had slavery." Certainly, and we have its equivalent—profits to the few from the labor of the many. Slavery pampered a class that could afford to be idle, and become degenerate; we have classes—leading classes, as of old—who can afford to do precisely the same thing, and they are doing it. But there is, of course, another side to this; our own civilization rests on its wealth, and it was the independence of the few, secured by the slavery of the many, that enabled the Greeks to build up the most brilliant civilization of antiquity. But it is neither the slavery that did, nor the thrift of freedom that is doing, the mischief, but the misuse that is made of the independence and leisure thus secured. What lies at the basis of culture and refinement, lies equally at the basis of luxury and degradation; and the opposing couples are locked together in the decline of every civilization. It does not matter whether the means for idleness and degeneracy come from the direct or indirect appropriation of the wealth created by human hands; as long as we indulge in the idleness and vanity, the luxurious living and pleasure-seeking of the "best society" of civilization, we shall go the road which others have gone, and no device of education will save us.

Nevertheless are great changes in education now pending; changes, however, which must be gradual, but which are at the same time inevitable. Let us hope that they will bring some improvement. It is the logical result of scientific methods to bring education up to the solid basis of the actual and the practical. For a part, at least, of mankind, it must recognize all truth and not merely a part of it; when it will be its aim to show things as they really are, and not as some interested party may wish them to be. It should tear the mask off the pretenses, set aside the obsolete, and adapt the teaching of the day to the

exigency of the times. Not the least of its merits should be the recognition of the fact that there are some things which education itself cannot do. It cannot accomplish a result without the means of accomplishing it. The teacher cannot impart to his pupil anything more than or different from what is in himself. Consequently, it is not possible to revolutionize human nature by any form of voluntary education. No effectual system of education can transcend the limitations of human nature as bound up inevitably with the order of nature at large; it can only adapt itself thereto. It cannot lift its wards above the fatalities of existence, but can only strengthen them by clearness of insight, discipline of faculty, and singleness of purpose to find the most of good amid the conflicts of the inevitable.

SECTION 204.—We cannot deal with the problem of elevating the great working classes without perceiving, in connection with human progress, the emergence of a principle which does not tell directly for harmony and happiness. It has often been repeated that discontent is a necessary condition of progress and development. Discontent will not down. The very means we use to allay it only opens new fields for its activity. An attempt to satisfy the "thirst for knowledge" only increases its uneasiness and intensity. The ameliorations of any situation in life bring some comfort, but at the same time may occasion greater discontent than ever. This is aptly shown by De Tocqueville's researches into the causes of the French revolution. The author believes that France had never been so prosperous as for the twenty years immediately preceding the revolution, and that restlessness and discontent sprung up under the stimulus of prosperity. As administrative abuses were gradually removed, the people became more dissatisfied with their situation. "So it would appear that the French found their condition the more insupportable in proportion to its improvement." And in general, "Evils which are patiently endured when they seem inevitable, become intolerable when once the idea of escape from them is suggested. The very redress of grievances throws new light on those which are left untouched, and adds fresh poig-

nancy to their smart : if the pain be less, the patients' sensibility is greater."—(The Old Regime and the Revolution, Chap. XVI.). The greater the number of our acquisitions, the more manifold become the sources of discontent. The historian Lecky observes : "The eager and restless ambitions which political liberty, intellectual activity, and manufacturing enterprise, all in their different ways, conspire to foster, while they are the very principles and conditions of the progress of our age, render the virtue of content in all its forms extremely rare, and are peculiarly unpropitious to the formation of that spirit of humble and submissive resignation which alone can mitigate the agony of hopeless suffering."—(Hist. Morals, II., 65). With us all in a general way, it is not a question whether we shall be satisfied and stand still, or feel dissatisfied and advance ; discontent we shall feel, and advance we must. The question more particularly throughout this inquiry concerns the preponderance of gain in good, all things considered, in our progress from the lower to the higher stages of civilization.

Two hundred years ago laboring people were not so well off as at present, but they were far more content with their situation in life. It is a peculiarity in human nature "that men can become accustomed to servitude beyond even the wish for change."—(Bain). People become most dissatisfied where freest with the largest opportunity. Some will rise out of others' reach, and the display of their means and habits of life are a source of irritation and discontent to those who have been less fortunate. In old times with less freedom, an impassable gulf separated the poor from the rich, and the former were usually content with their lot. What they lacked in goods they made up in stolid indifference or in religion and hope. While this resource of comfort is waning, the inability to reach what appears to be only a little way beyond their grasp, is endangering the happiness of a great many. Fashion and the selfish display of wealth aggravate this evil. And this bad example extends its influence down the social scale into the middle and even the lower classes, as it never did before in the history of the world. It does so

because of the cheaper, more rapid, and widespread diffusion of news, and the greater freedom and opportunity which is now guaranteed to most. People in the middle walks of life are driven to desperation by the mad struggle thus engendered. Not always the poorest people commit depredations on property, take to drunkenness, or end a disappointed career, may be, with suicide. This struggle under the lash of the vanities is a feature of psychological degeneracy in modern life which is worse than speculation and malfeasance in office, worse than alcoholic drunkenness, because it lies at the basis of these evils, and is largely the soil in which they strike root and grow. As a cardinal psychologic force, it is by its own inherent demerit doing more than any one thing to debase the tone of modern character, and especially is it doing this in America. It fairly burns and shrivels up the nerves and very souls of millions who are engaged in the mad struggle for wealth to assume such position in society as this vanity craves. Mr. Royce, who indulges the optimistic dream that women will one day be the educators and saviors of the race, yet admits that "To-day, show, pride, and vanity make them its destroyers, leading on men by their extravagance to corruption in private as well as public business, until confidence in men and institutions is to-day fairly gone, and the downfall of the nation almost inevitable."—(Race Education, 113).

What, then, is the remedy? There is none. Were you ever so eager to work, there is no assured resting place for your lever. The eager emulations of vanity burrow in every direction, and there is no solid ground. There might be an efficient remedy, if—but the base gives way, and the difficulty involved in the "if" is apparently absolute and insurmountable. If all mankind could become scientific and rational, this formidable "if" would be readily flanked, but the mass of mankind are predominantly emotional, and are quite likely forever to remain so. Erasmus was not greatly wrong in his reflection when they handed him Becket's holy handkerchief to kiss. The wiser wits may jeer, moralists may scold, and scientists may teach, but the human nature of a million years cannot be changed in its cardinal

elements at this late day. If all were rational in the conduct of life, the principal causes of corruption and decline might be greatly or wholly avoided; but vanity as a motive of conduct is far stronger than reason; and after a certain stage in society is reached, vanity it is mainly that pilots the way to ruin, both individual and national. I cannot believe with Larned that the frivolities of vanity can be put out of countenance by setting up rationality against them. This has been often tried and always found wanting. There may be palliatives for this great disease of civilization, but no radical cure.

It is fatal to a favorable prognosis of the case that the greatest votaries at the shrine of fashion are the most influential in the land. Those who rebel against the tyranny of fashion and vain display are jeered out of countenance by the officious people who mold public opinion. The evil is worst in the very centers of civilization, which boast of the greatest wealth and culture; there is least of it in primitive places. It is actually a development subject to the laws of evolution. The Methodist church for a long time in this country stood out against the vanity of display in dress and equipage, but it has been swept into the gay current along with most others. It had to consult the conditions of its own preservation in order to continue the instrument of grace to the unregenerate for their salvation. Clergymen generally do not dare to attack the vanities with any well-tempered weapon. It would be out of place and an offense against good manners to do so. For obvious reasons it would endanger their popularity and their places. They may preach to the people, but they must not preach "at" them. The vanities have a conventional sacredness which places them beyond the reach of reason and religion, and they are not slow to assert their supremacy. The "sword of the spirit" as wielded by modern hands is powerless against them. Church societies have in most places become the leaders and exemplars of fashion, and the churches so far head-centers of costly display, that the poor cannot afford to attend them. What they have lost in religion they have gained in folly. In former times

the church administered to the peace and contentment of the laboring people, but the time when it would discharge the office of comforter to the lowly seems to have passed forever by,—so far at any rate, as the main body of the Protestant church is concerned,—and it now whisks before them with its tinsel of vanities and inflames their discontent.

We are often assured that Christianity will purify our civilization and make it more lasting than those of the past. Indeed! Christians for the most part overran the Roman empire, and reduced it to comparative barbarism. Authoritative Christianity took possession of the empire before its course was run, but it had no power to stay the final catastrophe—it hastened it. Modern civilization has sprung up under the teachings of professed Christianity, and it is becoming degenerate like the old. Verily, the agencies of evil which spring up under civilization and need most to be counteracted and subordinated, become the very masters. Somehow or other they get the upper hand, reduce the moral and religious forces to subordinate places, and direct the course of events as the very executors of destiny. It is but natural for clergymen, being especially in charge, to urge the importance of religion to the individual and to nations as well, and they should do so; but when, in order to retain their hold on the people and on society, they surrender to the irreligious vanities of life, they lose their grip on the very religion that is so much needed, and do absolutely nothing to arrest the downward tendency.

If education but stimulates the discontent of the working classes, and if the ministrations of religion are losing their power to comfort the lowly, where are we to look for relief? There is no relief. By the very improvement of the laborer's condition of life, the extension of his freedom, the promotion of his culture, the enlargement of his opportunities, and the tantalizing display of the vanities, together with the weakening of religious consolations, is the lot of the laboring poor ever harder to bear. Harder to bear, fraught with more discontent, and still it is better than ever before,—such is the paradox. But we have a

logical right to this consoling reflection, that discontent which comes with improvement of condition and the spread of intelligence is not so deplorable a thing as, without reflection, we might assume it to be. Discontent and unhappiness are by no means synonymous. There is a sort of pleasure bound up with discontent, as there is pleasure bound up with the uncertainty of entering upon a doubtful conflict or the dread of playing one's part in battle. Of choice we go into the doubtful conflicts and into the battles. Restlessness and discontent by virtue of some quality in the human constitution, do not militate against the choice of what only adds to their intensity. We prefer civilization, and glory in its developments, whatever its drawbacks. A colored man once illustrated this principle in his statement to some northerners who were studying the southern situation: When a slave, his master was a preacher who treated him well. He was in all worldly ways better off as a slave than as a freedman, by his own admission; but he declared with animation and emphasis, "I tell you, gemmen, a man's freedom is de best thing in all dis world!" Thus we rejoice in civilization with all its drawbacks.

SECTION 205.—While the resources of a country are being developed and its industries ever on the increase, the capital invested in business fares well, and the laborer is sure of a fair reward. This is due to the cheapness and abundance of the natural resources. We may conceive it possible that a stationary condition might be reached, when supply and demand should be so adjusted to each other, and the distribution of proceeds so arranged that the laborer would not suffer. But there never has been such stationary state under the limitations and enlargements of modern invention, and no such industrial adjustment in the aggregate at any time. The industries are constantly changing. For a while the demand for a particular product rapidly increases, and then, in complication with commercial crises, or changes of fashion, it suddenly abates. Numerous examples of the kind are to be found in industrial history. A few years since thousands were employed in the manufacture of hoop-skirts, an

industry which is now dead, and with its death came the loss of employment, with embarrassment and want, to many a family (Rogers). The iron business is undergoing great revolutions. The Bessemer process has left many thousands of puddlers without occupation (Brassey). Only seven short years ago the iron trade of England was greatly stimulated by the "good times" and the building of railroads everywhere; but it no longer supplies the railroads of the world, and if it did, its market would be weakened, as there are fewer railroads building than formerly. At this moment (December, 1878) the cotton and iron interest of England is paralyzed, the manufacturer is suffering an abatement if not a cessation of profits, and the workmen in these industries are on the point of starvation.

The invention and multiplication of machinery, in the ability it confers to do more work with the same number of hands, are constantly operating in the same direction; for, even if most kinds of machinery may benefit the laborer in the end, it always requires time for the adjustment, and the inventor does not wait for the completion of adjustments till he and his coadjutor, the capitalist, set up another dumb multiplier of the working hand, to the consternation of the hungry man seeking employment. Still other causes of disturbance, by no means necessary and inevitable, may from time to time be stealthily sprung into existence by powerful classes for the still further increase of their power, to the injury of others; such, for example, as the creation by law of special privileges for capital, or as tampering with the standard of commercial values necessitating re-adjustments which cannot take place without suffering. But even if there should be no perverse interference like this, there will be constant disturbances, requiring constant readjustment as long as inventions continue to be made, as long as the industries change from one locality to another, as long as the fashions continue to be fickle, as long, in short, as the industries are variable,—retrograde here, stationary there, and elsewhere advancing with greater or less rapidity. These changes cannot be prevented, and the millions of laborers cannot be brought into

harmony with the demand for their labor by any scheme of adjustment. No intelligence short of omniscience could adjust labor to this capricious mutability. The changes cannot be foreseen, and the laborers are locally tied down by forces of inertia which only a small percentage of them can readily overcome. Poor men with families and unmarried women cannot shift from place to place with the demands of labor. According to Adam Smith, the human is "of all sorts of luggage, the most difficult to be transported." It is still so, and from the nature of the case, must always be so. Perfect justice to the laborer requires that he shall be present at the precise point where his services are most needed; but such perfect mobility of labor does not and cannot obtain. Only the wildest vague-thinking visionary could speculate on the basis of such an assumption. No one who has thought out the subject in detail, with a chart of human nature and of the industries in his mind, can be sanguine of any near approach to the economical harmony which presumes that laborers may always be where they are most wanted.

But this is not merely a question of local adjustment. Justice to the laborer requires not only that he shall be at the right place, but that he shall be able to turn his hand to the kind of work which needs to be done. His case requires not only mobility, but mechanical versatility. But in this he is the victim of the division of labor. All his life he has been tied down to one simple mechanical act till he has no aptness for anything else. He has been drilled by his industrial education to a stiff, narrow uniformity, which is the very opposite of versatility. The laborer is barred, by the modern conditions of his craft, from entering into the economical harmonies which presume ever speedy and perpetual adjustments between the worker and his work.

It is true that reformers have panaceas for all of these ills. They have clearly seen the detriment to skilled industry growing out of mere bookish education, and have endeavored in the way of remedy to associate labor with study. There are many schools

of this character in Germany, France, Switzerland, and some in this country. They are doing good in their way and supplying a need which is every day becoming greater. As the industries are becoming constantly more complicated, trained minds with trained hands become more and more necessary for their direction; and such schools will accomplish much if they prevent a falling off in the needed supply of skilled artisans. But it is extravagant to expect them, as some do, to transform the field of labor into an Eden of fitness and harmony. The various forms of industrial education through schools of design, trade schools, professional schools, commercial schools, developing schools, in which practice is united with study, are expected not only to secure the doing of work in the right way and at the right time, and far more rapidly than at present, but they are to transform the workers of the world into willing creatures—and all are to be workers then—who “will labor for pleasure and not for gain or from interest.”—(Royce). But admitting that these schools would have this magical power, are we to take it for granted that all the inhabitants of the civilized world will be able to secure their advantages? What are these schools doing now? Mainly training men and women in fine work for fine people, or training them for foremen and not for plebeian workers. This of itself is very well, good as far as it goes, and worthy of all encouragement, but it does not touch the great mass of industries which are hard, repulsive, and usually ill-paid. Just where the greatest need is, this remedy has no virtue. These schools have little relation to the indispensable labors of civilized life, and can have little, for here human and other machines do the work without the need of education. This fine training in the schools, be it ever so industrial, only co-operates with education in general to create distaste for all the coarser and rougher forms of industry, and it leaves the discordances as great as ever between the worker and his work.

Will these fluctuations in the industries ever cease? Will not the great centers of commerce and industry, in the future as in the past, keep on shifting from one country to another? Or

will invention come to an end, and all the countries of the earth become thoroughly settled up and improved without the wearing out of lands, so that the centers of commerce and of the industries, and the kinds of industry, and the proportion they bear to one another shall become fixed, with the populations of countries adjusted thereto for any great length of time together? Under the fluctuating climates, deteriorating soils, and exhausting mines of the earth, this can hardly ever be. Even communistic despotism could not establish and maintain any such fixed condition of things; and we are not called on to discuss the fate of the laborer under circumstances so utterly improbable.

SECTION 206.—The reward of the laborer must depend largely on the numbers of those who are competing for employment. The rate of increase, therefore, among laboring people becomes a powerful factor in determining the ability of laborers to command the situation, and no one who is interested in the well-being of the working people can afford to overlook it. Certain economists have been so thoroughly dominated by the conception of the "economical harmonies" as to slur over the question of population as a matter of little significance. One of the most marvelous "demonstrations" to be found in treatises on economical subjects is that by which Carey and Perry prove to their own satisfaction that, with the improvement of a country and its accumulation of capital, the laborers must fare better and better. Perry thus sums it up: "This demonstration is extremely important; for it proves beyond a cavil, that the value of labor tends constantly to rise, not only as compared with the value of the material commodities which, by the aid of capital, it helps to create, a truth we have seen before, but also as compared with the value of the use of its co-partner capital itself; and therefore, that there is inwrought in the very nature of things a tendency towards equality of condition among men. God has ordered it so."—(Polit. Econ., 230).

This is, indeed, the acme of economical optimism—pity it

were not true; but we fear that God does not ordain Utopias for mankind in any such absolute way. God's bounties are only offered on conditions which involve more or less self-sacrifice; and the conditions must be observed and the sacrifices made or the bounties are not bestowed. Laborers cannot reap the benefits of increased capital unless they strictly observe the conditions on which such benefits accrue. The "demonstration" here referred to (p. 229) takes no account of conditional factors in the problem. It ignores the fact that capital itself sets up dumb competitors of the very laborers who are looking to capital for employment. But admitting that this machine-competition is neutralized in the end by increased demand for products, still the "demonstration" totally ignores the competition of laborers among themselves, which, without prudence in the multiplication of their class, might become even more intense, notwithstanding the increase of capital. It ignores furthermore the law of diminishing returns when through over-population the soil is pressed for greater production, which is only to be had by a greater proportional outlay. If this demonstration were true, in all old countries where capital is plenty and interest low, wages would be high; but the reverse is true. In old countries where interest is low, wages are low; and in new countries where interest is high, wages are high, and there is far more equality among the people: and where wages are high, none need be very poor though none may yet have become rich. Time is required for the inequalities of civilization to develop.

It may be laid down as an axiom that the lowest breeds of civilized peoples evince a recklessness in multiplying which is only equalled by their shiftlessness in providing; and it is to be feared that, in the future as in the past, only the mortality from overcrowding, mal-nutrition, vice, and disease will keep this class from gaining on others. But let us take a more cheerful view of it. Let us suppose that population will be kept within limits by voluntary effort. Does this involve no cross? Restraint on population involves self-denial, emotional repression, defective life, suffering. Not marrying till late, or not

marrying at all, is to stifle hereditary impulse of the strongest character ; and this with most natures involves serious discordance, physical as well as mental. It is only possible to avoid the one evil by suffering another ; and this will be found true, whatever the means used to keep population within bounds.

SECTION 207.—Since this was writtten, a speculative romance on the subject has been published—Progress and Poverty, by Henry George. It recognizes to the full extent the inequality and injustice which are becoming intensified under civilization ; but it has a panacea, an elixir of life, a world-cure, which will destroy the seeds of all social disease, and restore a perfectly healthy circulation among all the members of society. It reminds one of Godwin's Political Justice and Condorcet's Tableau Historique ; but, unlike them, it does not begin by changing man through educational means as a necessary step to the changing of society ; it begins and ends by a single act of the State, whereby humanity and society are to be revolutionized and exalted. It is in the genuine vein of the world-mender : "What I, therefore, propose, as the simple yet sovereign remedy, which will raise wages, increase the earnings of capital, extirpate pauperism, abolish poverty, give remunerative employment to whoever wishes it, afford free scope to human powers, lessen crime, elevate morals, and taste, and intelligence, purify government, and carry civilization to yet nobler hights, is—to *appropriate rent by taxation.*"—(Progress and Poverty, 364). That is it—simple and definite. Like all the infallible remedies, it cures all the diseases.

There are to be no other taxes ; the entire virtue of social regeneration lies in the "confiscation of rent." The great body of our yeomen owning their little farms, and constituting the best element in society, yet bearing the brunt of extortion by monopoly and discriminations against them by "protection," are now to be finished at one swoop, in the name of justice, by the government pouncing upon them and confiscating their capital in land, while all other capital great and small is left untouched, except to be relieved of all further taxa-

tion. And this measure is to regenerate society. The case is made out as certain railroad maps are made—by distortion, contraction, and omission, with a broad line for the road and its branches, till it appears to be the only considerable railway in the whole country. What with undue emphasis and elaboration, bare mention and slurring over, occasional vagueness, and total omission, with outright sophistry, confident assertion, and audacious paradox, the treatise is a brilliant one, and has had a selling success in different senses, being well calculated to mislead people who read hastily, and are without a sufficient knowledge of political economy.

We refer to the book in this connection on account of its assumed utter refutation of all Malthusian ideas. It denies the law of diminishing returns, and maintains that the denser population is, the greater the returns to labor. To this the proper reply is, there might be greater returns up to a certain limit, but less and less from that limit on. A hundred people might live more comfortably from a square mile of land than ten people could; but it does not follow that one thousand inhabitants to the square mile could subsist better than one hundred to the square mile. But our author gives no hint of any such limit; as much as to say that because an acre of land with forty apple trees will produce ten times as much fruit as an acre with only four trees, therefore, an acre containing four hundred trees will produce ten times as much as an acre with forty trees.

But how is it made to appear that the more people there are the greater the amount of production to each one? The author states a case from California, in which it is fairly shown that it cost more to produce a given quantity whenever it became necessary to tax the natural resources to any considerable extent. The statement illustrates the law of diminishing returns; but then he proceeds formally to explain it all away. In showing the greater production of California per head after the population became considerable, he recognizes the assistance given to labor by “roads, wharves, flumes, railroads, steamboats, telegraphs, and machinery of all kinds”—forms of capital; yet

he proceeds with the exposition precisely as if capital played no part in it; and what should be credited to capital (imported or surplus labor *saved*) is formally credited to the greater population! But he not only ignores capital in this disquisition, but after recognizing, in his previous statement, the assistance which capital gives, he then finishes the chapter by formally denying that capital is a factor of any consequence in the problem!

But there is still another argument why the law of diminishing returns is totally at fault—an argument which is at once fundamental and conclusive! It cannot be that greater expense is necessary to equal production as countries grow older, because forsooth “man cannot exhaust or lessen the powers of nature” on account of “the indestructibility of matter and the persistence of force”! Such use of science surpasses even Joseph Cook’s. Only think of its relevancy! Man cannot lessen or exhaust the powers of nature in a given territory to subsist its population, because he is not mighty enough to annihilate an atom of matter or a foot-pound of force! It has been supposed all along that it is not matter and force in general, but in particular forms, which constitute man’s subsistence, and that he could, by taxing the soil too heavily, rob it of its power to produce these useful forms; but it seems that this was clearly a mistake, for man cannot bring about diminishing returns to labor for his sustenance, except by absolutely annihilating matter and force! It is true that man is not so mighty as this, but it is most unfortunately true that he has been mighty enough to desolate great regions of this earth, till “where were once great cities and teeming populations are now squalid villages and barren wastes.” These are the author’s own words under a different head; but he does not once inquire why it is that bats, and owls, and jackals haunt where once were busy cities, in the midst of fertile plains now barren. It is given as an ultimate fact, without cause, that men will not breed in some places as they used to; consequently there is no danger of population overtaking subsistence!

Contrast with the above vagary, Roscher’s plain common sense concerning the indestructibility of matter, and the failure

of the soil to produce: "As no matter wholly disappears from the earth, so, in exhaustion of the soil, it is only a question concerning the dislocation of its valuable constituents, many of which may be entirely lost to human use."—(*Nationalökonomik des Ackerbaues*, 72.)

The author, in his disproof of Malthusianism, labors to show that density of population in Ireland, India, and China has nothing to do with the famines in these countries. He refers them to bad government. We admit the value of this element, but if bad government were the sole, or even the principal, cause of famines, we should certainly look for famines as a common thing the world over. If this author's theory be true, how comes it to pass that famines almost always take place in countries where population is most dense? Famines ought to be worst where government is worst without regard to population, and where the people are thickest they are wealthiest, and ought not to starve at all! Are we, indeed, to accept the philosophy that a population of one thousand to the square mile, as in parts of India, can subsist as easily from the soil as one-tenth of that number, and that when famines set in, they will be no worse where population is dense than where it is sparse? If the population of Ireland had been but four millions instead of eight when the potato rot came, would the famine have raged there as it did? Is it just as easy to feed two mouths as one when rations are scarce?

It may be true that, as in Brazil, there may be famines in sparse settlements of indolent people who depend solely on the soil for a living and have little or no commercial intercourse with the rest of the world, but that does not prove that it is just as easy to subsist a large number as a small one from the same territory. The author begins his refutation of Malthus by the assertion that "the power of producing wealth in any form is the power of producing subsistence;" and before the chapter ends he slides into the substitution of the word wealth for subsistence; and because a considerable population may produce more wealth per head than a sparse population, therefore, he con-

cludes, a dense population can subsist more easily than a sparse one on the products of labor. But we must discriminate between kinds of wealth. Some kinds will keep people alive and some will not. We are liable to bad seasons, sometimes to a succession of them, and through a conspiracy of causes this may sometimes, in the future as in the past, be general. If the soil should not produce for one year, what would all other wealth do to subsist the population of the world? The more people there were and the wealthier they were, the worse off would they be, and the more of them would die of starvation. What would millions of wealth in hardware, building materials, and clothing then do to keep soul and body together? It is true these things can be exchanged for food when there is food; but the question here concerns the quantity of subsistence itself which may be produced from the soil for its population; and no profusion of ingenious paradox can set aside the fact that the greater the number above a certain density of population, to be subsisted (though each were a Rothschild in wealth), the greater the danger of short rations.

CHAPTER XXXII.

INFLUENCE OF THE RELATIVE PROLIFICACY OF CLASSES ON SOCIETY.

SECTION 208.—In order to understand the social and intellectual status of vast bodies of mankind, and attempt a forecast of their future, we must consider the relative increase of the various classes in society. Whatever the system of education may be, it is the relative increase of classes which must largely determine from generation to generation the aggregate or average

of human elevation. There is no problem with which science and philosophy have to deal more central and all-pervading than this, and none which is more perplexing or apparently more difficult of solution. It is easy to write flippantly about it, and run off with a few isolated facts, or put down flat contradictions on opposite pages without seeming to perceive it. Thus, the working people, the peasants of France and Switzerland, are increasing none at all or very little. This must prove something. It shows, they say, that the small farm system with the possible thrift thus secured, exercises restraint on population. Very well: but how is it that these people have avoided tenantry and pauperism while others in like situation have not? The peasantry of England did not remain master of the situation by virtue of their small holdings, and as a class they have been swept out of existence. There may be, indeed there must be, some deeper cause for the prudence of the French-speaking peoples. Small holdings in India are passing into the hands of the usurers from people who will borrow, or who must, and pay a rate of interest as deadly to their class as an Indian famine. The Irish suffer from a like fatality; and they marry young and have large families whether living in homes of their own, working the land of other people, or laboring by the day. What glib philosophy will be called in to explain these anomalies? Until recently in the United States all nationalities had large families. This proved, they said, that people bred rapidly on plenty in connection with a free and easy outlet to virgin lands. But now, we have more wealth than formerly, plenty still, and no lack of lands, and yet the families of native Americans are falling off in size. Those who are best off are usually least prolific. During the last decade—1870–1880—Northern whites increased about twelve per cent., Southern whites thirty per cent., and colored people thirty-three per cent.—(*Popular Science Monthly*, September, 1881). What law, then, governs the size of American families? And if there be such a law, what light does it throw on the law of population in France and Ireland?

We can only study this question by the light of the past and

of what is taking place under our own eyes. We may define, with some degree of precision, certain conditions which affect the rate of multiplication, without pretending to define all of them. While a people is rising into greatness and is energetic and hopeful, it multiplies rapidly. When it becomes powerful and wealthy, and the refined pleasures are emulously cultivated by such as can afford to do so, there is little or no increase of the leading type except by transference from foreign countries or from the lower classes. Take Rome as an example. The old Roman stock did not keep good its numbers under the enjoyment of the greatness, which in former ages, the Roman people had won by their hardihood and heroism; and the last defenders of the Roman empire were not Romans. As already stated, the possession of overplenty leads in time to the refinements of luxury, while these in turn are sure, through emulation in the vanities, to generate dissipation and debauchery, and appear to be everywhere and at all times incompatible with vigorous reproduction.

Associate causes co-operate to this end. Idleness and sumptuous living are no doubt of themselves unfavorable to that perfect action of the physical system which is a necessary condition of healthful child-bearing. As a rule, the steady-working, plain-living people have the most and the healthiest children. In the upper ranks of civilization, where the means of enjoyment are abundant, it becomes the fashion to enjoy, and decided repugnance arises toward the self-denial which continuous child-bearing necessitates. The maternal duties are shunned, and to this end every known device is called into requisition. These devices are not a late result of science, as some friends and enemies appear to suppose. Even barbarous nations practice some form of them, as did the civilized Greeks; and Roman matrons under the empire did not allow themselves to be greatly troubled with children. That measures were freely used to this end is shown in Euripides, Juvenal, and Plutarch. Rulers and censors endeavored to prevent the falling off of the old Roman families, but there appeared to be no effective remedy. Legislation by

premiums and penalties was of no avail. The forfeiture of honors and privileges for childlessness did not overcome the repugnance to parental duties, and the premiums of privilege and inheritance for having children were not sufficient to offset the sacrifice it implied of the dissipations of high life. The leading families of Rome passed away, one after another, under the paralyzing influence of wealth and luxury and their concomitants, and the legacy of imperial greatness, left to other hands, wasted away. The descendants of foreigners and slaves could not conserve what the old race had won. Of like character had been the fate of Greece. After the Macedonian conquest the Greek race became adulterated with foreign blood. There was no longer "a free State proud of their unmixed race." According to Tacitus, the old Athenian race was extinct before his time. The old names eventually disappeared, and a mixture of former slaves and foreigners held the places of the historic Greeks.

Herbert Spencer takes the very tenable ground that the more culture and refinement prevail the less will people multiply. Greg and Galton (quoted by Darwin) take substantially the same view, though for reasons, in part, additional to those which are given by Spencer. Professor Bowen has adopted the same view, using it, however, to a different end. Too much drilled brains, like too much wealth, luxury, and indolence, put a stop to healthy and vigorous reproduction. The highest known conditions of civilization contribute doubly to this end: by favoring an indolent, dissipating class on one extreme; and on the other, by driving men and women, under the lash of competition, into nervous exhaustion with all its attendant evils.

From the preceding considerations it might hastily be inferred that when civilization covers the whole available earth, if such a thing can be, population will of its own accord become stationary. There are considerations, however, which make difficulty with this view. Some countries have, indeed, become stationary in population, and then declined; but this has usually taken place through change of commercial centers and deterioration of the soil. All highly civilized countries are not now necessarily sta-

tionary in population because civilized. Some of the European nations of greatest culture are sending a large surplus of population eastward and westward every year. For this surplus there is no comfortable and inviting room at home; and while so many are emigrating, there is still, in most of these countries, a constant increase in the home census. There are two grand reasons why civilization does not of itself render the population of a country stationary. One is that the causes of sterility do not affect all classes alike, so that while some become stationary or decline in numbers, others still increase more or less rapidly; and some may increase very rapidly. The other is that new sub-races and mixed breeds appear to be constantly springing up, which have great constitutional vigor, and no insurmountable repugnance to rapid multiplication for considerable periods, till they in turn become debauched.

SECTION 209.—In most European countries there are classes which multiply very rapidly, though there may be other classes which do not. The fruitful families belong mostly to classes which are poor or only moderately well-to-do. The conditions which favor small families never penetrate to all ranks of society, and while this is the case, there is no guaranty that the world will fill up with a high grade of human beings, and then forever maintain a proper balance between want and supply. In England, Sweden (Bowen), and most countries, the laboring people increase much more rapidly than the so-called higher classes. In France there is greater prolificacy among the inhabitants of the poorer, than among those of the richer, departments. The aristocracies are everywhere running out, as in the Roman empire, and they would become extinct but for constant accessions from the ranks below; and some of these come up from almost the very bottom. Reigning dynasties are not apt to last long; and once a family has reached the pinnacle of human greatness, its doom is written. There are living those from whose loins will spring by direct descent the great historic characters of the future. Where are those happy, though unconscious, patriarchs now to be found? Among the distinguished

of earth? Scarcely one of them. If they could be identified, they would be found in the middle and lower classes in some of the fields of useful industry. [Sir H. S. Maine observes, "that the best securities for a pure pedigree through males are comparative obscurity and (I might almost say) comparative poverty, if not extreme."—(Fortnightly Review, February, 1882).] What saves the rate of increase in population is that all cannot, or will not, get up into the paradise of wealth and culture—only a comparatively small percentage.

The proportion of classes in civilized countries does not depend altogether on the relative increase of such classes; it is determined rather by economical conditions which invite, or rather compel the transference of numbers from one class to another, in the equalization of supply and demand. The peasant class in England disappeared through the operation of economical, and not of physiological, causes. The upper class is kept full, or it may be increased, by accessions from the lower classes. But this does not set aside the fact that the hard-working people—those who provide the luxuries for the more favored to enjoy—that such are generally the most prolific, and maintain the high rate of increase in population. If machinery could do all the labor with little wear, all might have plenty, and time to enjoy it, and the causes of relaxed reproduction, resulting from pampered leisure, would affect the whole people; but this condition is not a possible one. If all classes could be affected equally by the enervating conditions of high life in civilization, we might, indeed, expect a general arrest of reproduction. But nothing of the kind ever has existed in any society, and from the nature of the case never can, except by virtue of a mental, social, and physical revolution for which there is at present no warrant.

Hard physical labor and the anxieties of business-care antagonize the enjoyment of the artistic side of life. Necessary care and labor draw on human resources, and what they get, the refinements of feeling cannot have. If the struggle of life brought little care with no anxiety or overwork, we might then

calculate on the unobstructed action of all the appliances of culture. We might then count on an indefinite progress in knowledge and refinement among all the people, with such corollaries as properly belong thereto. We should expect the reign of justice, and common sense, and common sympathy, when there would be little need for the force which governments use. Under the sway of science and rationality, passion would be subordinated to thought, and population would be adjusted to the environment. But this would be getting a new world out of moral elements so different from anything known in human nature past or present, that it would be equivalent to a creation *de novo*. There is no basis for any such dream. While the greater portion of mankind in civilized society have always been drudges, the fact that human wants, mainly of a frivolous character, keep fully up with the increased facilities of production, as civilization advances, points to the indefinite continuance of life for the many heavily weighted with work and care. Dr. George M. Beard truly says: "One cannot imagine a nation in which all should be rich and intelligent; for a people, composed wholly of educated millionaires, intelligence would be a curse, and wealth the worst form of poverty. For Americans, as for all people, this law is as remorseless as gravity, and will not go out of its way at the beck, either of philanthropy or philosophy."

The common school education, which is intended to elevate society in general, can only accomplish this end to a certain extent, and then maintain, without elevating further, the position thus secured. It lifts a certain proportion within reach of higher education, and these pass on into the higher orders of society, which, being diverted by other motives do not hold their own by natural increase. And just so far as education seizes upon the toiling millions and causes them to exercise restraint, it is families that are affected rather than the masses. The better sort multiply less and lose in relative numbers, while the more animal may remain unaffected to breed as rapidly as ever. Thus, by the very act of lifting a portion of society up,

and giving it self-control, may education defeat its aim of general psychological elevation, by maintaining a larger opening in society to be filled up by the improvident and shiftless who will not exercise such restraint. It thus becomes difficult to push the advantages of general education beyond a certain point. It is even true that, "with all the manifold means and appliances for popular culture that the present age can boast, the 'masses' are in danger of becoming a less, rather than a more, cultured body."—(Thomas Wright, *Contemporary Review*, July, 1881). The tables of the ninth census (1870) show that, even in States which, like Massachusetts and Ohio, have given most attention to the education of their children, there was an increase of illiteracy during the decade. And then it is quite possible to be "the most common-schooled, and the least cultivated, people in the world," as Minister Lowell asserts of his fellow countrymen.

Another consideration respecting the influence of classes on society must not be overlooked in connection with the relative increase of classes. The great middle class is that which, more than any other, conserves the moral and political status of society. And of this class those who are at once owners and cultivators of the soil, contribute to society its most substantial elements. The best men and women are born on the plains and the hills and in the valleys, and for the first few years of their lives breathe the fresh, pure air of the country, and then push their way into larger fields of usefulness. In times past, it has been the fate of this class, in the course of national changes, to become gradually extinguished, leaving the so-called upper and lower classes, with an ill-bridged gulf between, when the national energy waned and at length succumbed to the aggressive vigor of ruder races. Rome again affords us a striking illustration; and England is shorn of much of her power among the nations by the loss of her yeomanry. Instead of an intelligent, independent, and prolific class on the soil, it becomes, under tenantry, a stolid, eminently bucolic class, going to swell the ranks of the dependent, toiling, hopeless millions. This

tendency cannot operate in our own country as yet to any considerable extent; for those who are thrown out of their homes by foreclosure under commercial revulsions, have an outlet still in which to retrieve lost ground. But this will not always be so; and without greater private as well as political wisdom on the part of the people, the time will come when, as a great New York newspaper is reported to have said, "The rich men shall own the soil, and you shall toil."

SECTION 210.—But this is not more a question of classes than of races. Blood tells; at any rate the fashion does, which is closely allied with blood as well as with condition. Among certain peoples it is the fashion to marry young and have large families; and it matters not what the circumstances of the responsible parties may be, whether of plenty or of want, their descendants are numerous anyway. Some among them might not of their own accord care to marry so young, but the fashion sweeps them into the current along with the rest. We may instance the Celtic Irish as an example, although the race is no doubt mixed with a large infusion of Teutonic blood (Lecky). One and two-thirds centuries ago, these people numbered but eight hundred thousand; now they number many millions, and are helping largely to fill up the new places of the earth. They are never debauched with luxury, and their methods of life are often hardy and rough, and not always orderly and healthy, still they are exuberantly prolific.

Further, there is reason to believe that new races are springing into existence, prolific and viable, whose destiny on the planet it is not possible now to forecast. The old notion, mainly propagated in the interest of slavery in this country, that crosses between unlike races are weak and non-prolific, is traversed of late by some of the ethnological masters; and it is shown to be in all probability an error. Some of these crosses, as that between the negro and the white, and that between the Indian and the white, appear to have equal constitutional vigor with either of the crossing races, and with less intellect than the higher, but more than the lower. The crosses are scattered far

and wide over the Americas, and whenever their location is somewhat isolated, and their settlements beyond the civilized limits, they may preserve their identity, become fixed as a type, and rise to an historical significance not at present dreamed of. It is to be recollected, however, that the greater mobility of modern individuals and the spread of cosmopolitanism are more unfavorable than anything in times past, to the formation of such distinct types. But even if no distinctive type of man may grow out of such crossing and intermixture, the infusion of the lower blood into the higher must have an influence, not only on prolificacy, but on industrial capacity, educational susceptibility, and psychological elevation.

The ancient civilizations were overrun and taken possession of by hordes of barbarians. New races took the place of the old. It has been assumed that the like cannot take place with the nations which are now in, or rising to, their prime. It is true that such races will not emerge from unknown or little known regions in the East or North to overturn nationalities, and change the face of the world; but they may arise in our very midst. Out of the numerous mixtures taking place in the United States, some form more hardy, energetic, and industrially aggressive than any other may take the lead in multiplication, incorporating into itself minor types, and eventually filling America largely to the exclusion of others. This privilege of destiny appears not to fall to the lot of the Yankee proper, since, under modern influences, he is greatly falling off in prolificacy. As he becomes reduced in the relative weight of numbers, he will fall in ethnological significance, and by absorption into others, disappear as a distinctive moral and physical type. He is yielding to the Irishman and the German. But if these should become too much infected with the debaucheries of civilization, they may eventually succumb to some other,—possibly to some type with admixture of blood not by any means the most refined. We must remember that it is not necessarily the highest peoples that come to predominate. It is not the highest but the most fitting that prevail. It is the hardy and energetic

rather than the refined. The result must be determined by conflict in some of its forms, and as the arena shifts, new fighting qualities come into play. When it was a trial at arms, the elements of success were quite different from what it will be when the result is determined mainly on an industrial and economical basis. It is the people that breeds and has enterprise and push to make room for its progeny, that gets the most of the earth's surface. It is the people that can stand the drudgeries of life and still multiply, that can live on little and still preserve its constitutional vigor—such a people, in the close and desperate competition of civilized life will extend its area, and crowd out those who are wanting in those strong points for the contest. The few wants of simply constituted, industrious people, are light weight in the struggle of life. It is practical superiority. The Anglo-Saxon, who is habituated to abundance, must strain to the utmost to procure it, and his life is attended with more disappointment, and is more exhausting because of his more numerous wants. The more dependents he has the worse this is; hence, he is best pleased with a small family. The many wants with few children weight a man in the battle of life, as much as few wants with many children. It is well, from this point of view, that our people refuse to the Chinese the privilege of immigration. If they really settled in great numbers among us, no Americans could stand in competition with them, and our industrial classes would be compelled to adopt Chinese habits; and the lowering of economical habits would lower the grade of character. But who knows but we have already among us some type of people who will eventually be our barbarian? Suppose our higher types are losing in comparative prolificacy—and this is no supposition, but the demonstrated fact—then will the newer types fill up the land, and eventually swallow up the less prolific types, and will thus give cast to the psychology of the people.

A diversity of distinct race-types can hardly form in this country, as has been formed in Europe. The facilities for inter-communication and the use of the same language over so large

a territory will prevent it, and go far to obliterate the effects resulting from differences of climate. Imitation and sympathy, among people who so freely intermingle, will be a powerful factor in producing uniformity of mental type. There is nothing but color to prevent the free interblending of peoples. There will probably always be a colored race and a white race distinct from each other, but neither varying so greatly within itself as to present distinct types. But the blood of some one or more types or crosses will, through energy and prolificacy, have a larger share than others in the formation of the coming man.

There are, of course, difficulties in the way of rapid multiplication among inferior peoples in the lower classes. They are often crowded together in unhealthy districts, often filthy and ill-fed, often without medical attendance and intelligent nursing, and in consequence, the rate of mortality is higher than it would otherwise be. But this only obtains to a partial extent. Usually they are tough, and their children surprisingly viable; and earlier marriages and the greater rapidity of child-bearing far more than make amends for the losses from adverse causes. The census returns show this conclusively enough. The negro in the South belongs to this category. The mortality among colored children is often greater than among white children; but in spite of drawbacks, colored families are apt to be large, and the last census (1880) shows that the percentage of gain in the colored population is greater than in the white population, even with the accessions to the latter by immigration. It is true that the battle of life may prove too hard for some of the working classes. Through unhealthy occupation some operatives may be so worsted as to lose the physical vigor necessary to sustain a high rate of increase. Some occupations of civilized life so lower the vital energies and dwarf body and mind, that those engaged in them may not be able to keep their numbers good. But optimists will not insist on this sad feature of the case; and there will always be rough occupations favoring the hardihood of workers who will multiply rapidly.

SECTION 211.—The rise and development of human faculties, in the course of evolution, may afford grounds for the belief that the like process is still to continue for an indefinite period in the future ; but this overlooks the great fact that all movement goes in careers, reaching its maximum in ascent, and then descending. Many such careers are shown in the history of mankind. The life of the individual illustrates the law with peculiar emphasis ; and the rise and fall of societies, in the general course of history, rigidly follow the same law. As one form of institution goes down, another rises ; and the idea that the succeeding is always superior to the preceding is not true. The systems which arose during the Middle Ages were not equal to those which they supplanted. There was nothing in the papal and feudal direction of society which challenges the admiration of mankind like the older Greek and Roman. Mediæval institutions belonged to lower conditions of humanity. This shows that our own civilization, of which we are so justly proud, though doubtless superior to any which has ever existed, does not establish the rule that improvement necessarily accompanies change. The rule which history establishes is that civilizations reach a maximum, and then become comparatively stationary or decline. It is true that there are now principles of conservation which did not exist in former times, such as science and the printing press. But these are not advantages which are susceptible exclusively of use ; like every good thing, they may be neglected or abused. Man is not in their hands to be molded according to any supposed inherent tendency in them ; they are in man's hands to be dealt with as he wills. The type of people must be equal to the emergency of conservation and use, else society will decline, whatever its advantages. Everything depends on the moral and intellectual capabilities of the people to continue the proper use of their opportunities. If, through the mixing of peoples, the type of character declines, then will the type of society assuredly deteriorate. Greek civilization unequivocally illustrates this law. Greek civilization was maintained by the psychological elevation of the Greek type of mind,

and when, through the mixing in of other stock, this type lost its integrity, Greek civilization came to an end. The monuments of Greek genius and the education afforded by established customs had no power to perpetuate Greek activities after other blood had entered into Greek veins.

Everything considered, the old Greek civilization is the most wonderful that has ever existed; and it was the work of the descendants of the original Greek gentes which founded little states in a locality which was especially adapted to the focusing of the commercial and intellectual activity of the times. The Roman system was in like manner established by the descendants of the gentes in Latium, whose chief characteristics appear to have been austerity of morals, rigid military discipline, and aptness for political organization. But the example of centuries of such morals, discipline, and organization, with the remembrance of their rewards in success, was not sufficient to maintain the grandeur of the Roman system after the pure habits and the pure blood had become corrupted. We do not know but there is a principle of history to be discerned here, which will direct the movement of societies on earth through all time.

But while it is true that present civilization is, on the whole, superior to all others, it is not true that it is superior in all ways. Some forms of Greek art reached a development which has never since been equaled. One of the best indications of a high type of mind is, perhaps, its freedom from bias; and I doubt very much if in our own times, with all our advantages, we are superior to the Greeks in this respect. Many Greek thinkers approached even the delicate subject of religion with a freedom from bias which puts to shame the bigotry still existing in the nineteenth century, and is hardly surpassed by the most judicial temper of modern inquiry. But still there is an advantage the modern has, beyond anything known in past history, and that is the rigid system of intellectual guidance which has been developed in connection with scientific work. There is also a body of truths affording a solid basis for the operations of future inquiry, such as has never existed before. Still, when we

consider the great indifference of the mass of the people, and the small percentage who avail themselves of these advantages, we can readily imagine that with a considerable decline of psychological quality, all these advantages might avail but little. Take out one-tenth of one per cent. of modern population, selecting therefor such as are most interested in scientific truth for its own sake, and there would soon be an end to all achievement in this direction. And if, in addition, the psychology of the remainder should be lowered by a little admixture of weak blood, there would be deterioration at once in the tone of society. The tenure by which we hold our present high position is by no means perfectly assured.

It hardly seems possible to advance to higher forms of social existence except on the warrant of a corresponding advance in individual development. A given type of mind clothes itself in appropriate social forms, which it has no further power of itself to improve. If the social compound is determined by the quality of the social units, or individuals, which enter into it, then is it important to know whether or not there is a limit to individual development.

The human faculties have emerged one after another in the course of human evolution, and no one can say that the process has yet come to an end. We are apt to think that there are individual minds now superior to any in ancient times. This may be a delusion due to natural egotism and to the apparent superiority arising from superior opportunity. Ancient genius had not the same immense field of suggestiveness which is now open to all comers. It is doubtful whether modern genius is superior to the ancient in anything except in what relates to science, and this is rather the accumulation of past experiences than the direct consequence of individual endowment. Galton, in *Hereditary Genius*, reckons that the Athenians were as much superior to the English, as the English are to the negroes. The estimate, however, so far as relates to the comparison between Greeks and English, has reference to average capacity. The best Greek minds might not have been much if any superior to

the best English minds; but the proportion of mediocres was far less in Attica than in England. The psychology of Athens was an elevated plateau from which genius shot up into peaks piercing the sky. But this is perhaps due to the fact that one class performed the drudgery for another class, which was impelled by competition to diversified activities in an exalted sphere, and which thereby secured for Athens its unchallenged superiority.

Every form has its degree of perfection, and is consequently not capable of endless improvement. For illustration, take the race horse or greyhound. By breeding and training he can be made to reach a certain boundary of speed, which constitutes the utmost limit of his perfection. This perfection requires a certain collocation of nerve, muscle, and bone, of anatomical parts, and physiological functions, and when the precise balance is reached which produces the highest results, that balance cannot be disturbed without deterioration. If the build, for example, is made more slender to favor agility, there is a weakening of endurance for want of sufficient stomach, lungs, and muscle.

By proper training, the athlete acquires strength and endurance for a certain period and to a certain point, but he at length reaches a score which no training or device will enable him to exceed. It is precisely so with mental training. Man's brain, as lying at the basis of mental power, must have sufficient physical support in the rest of the bodily system, or it will not be equal to the greatest possible results. The exercise of intellect may be carried so far as to weaken the physical functions upon which the brain depends for its supply of nutriment, and too much culture may eventually cut off the capacity for culture. Man's body has long since ceased to develop, having acquired during the historical period no new capabilities which depend on structure outside the brain. On the other hand, the brain doubtless has differentiated new capabilities, and these seem to have reached, on the whole, as high a grade in ancient as in modern times. If this be so, it is not likely that the future man will be endowed with mental gifts greater than he has heretofore

enjoyed. Here, as everywhere, a limit must be reached which it is not possible to pass. The mental faculties, through adaptation to changed circumstances, may change in cast, but not in their aggregate of power. Still this is a vague subject, on which we cannot afford to dogmatize.

Granting that the human mind reached, or nearly reached, its maximum development in ancient times, that does not necessarily imply permanence of the mental forms which then prevailed. The mental structure changes; but while it gains in particular directions, it necessarily loses in others. What, for example, it has gained in the capacity for thinking, it may have lost in the capacity for art. Now one type of mental execution prevails, then another, and after awhile still another, and it may be an open question which is the greatest.

There are two lines imaginable for individual development by breeding and training to take, the one scientific, the other haphazard. So far as man is concerned, the former is just barely imaginable; it is not likely ever to be adopted. The latter will prevail in the future as it has in the past; and the dominant want of the times will determine the direction of highest achievement. The intermixing of lower with higher peoples, for which opportunity is greater now than ever before, is more likely to breed downward than upward, resulting in a moderate grade of mediocrity, with occasional instances of spasmodic capacity, such as we now witness. When the blood of lower and higher stocks is thoroughly intermingled, which, of course, requires a long time, it must result in something like an average between the two, as we may any time assure ourselves by examples of crosses between the Caucasian and African races. The optimistic vagary that crossing necessarily improves, elevating the progeny into a psychological altitude greater than that of the parentage, has no warrant. Races have improved through the stimulus of the environment, and the simplest race-types, like the Jewish, Greek, and Roman, have reared the great monuments of history. It is true that the mixing of two equal branches of a great race may so far unsettle fixedness of char-

acter as to increase susceptibility to forces in the environment which cause change and improvement; and the Teutonic triumphs of modern history are probably in part due to this cause. But when the intermixing is universal, and inferior blood is creeping in to taint the whole mass in time, it is a condition which tells unfavorably for the cherished dream of man's future exaltation.

SECTION 212.—There is also a great fact of modern history which, it may be thought, invalidates preceding considerations concerning the rapid increase of the hardy rather than the high. No doubt the general psychological level is a good deal higher now than it was two hundred years ago. During the very period when there should be degeneracy from the gain of the lower on the higher, the reverse has proved to be true. There are more sensibility and more intelligence than ever before, in spite of the *Cassandras* of ethnological speculation concerning the relative increase of classes and races. Very true. These two centuries have been very remarkable. Never before has science so shone with an ever-increasing lustre on all subjects, speculative and practical. The joint action of discovery and invention has armed mankind with many a weapon of high civilization. Science has penetrated the dark places of the human understanding, and literally driven out devils which were torturing mankind. This work has been seconded by many of the appliances of education, and the artisan's child may know more, if he will, than the wisest men knew in times past. We who have lived in the midst of this, vainly imagine it will continue without ceasing. If it should do so, it would falsify all history. We have already intimated how difficult it is to push the good influences of education beyond a certain limit. The antagonizing tendencies bring the progressive to a stand-still, and may for a time, under psychological decline, force them into reaction. And so far as sensibility is concerned, it is just possible that it may advance quite too far, under the nerve-stimulating influences of a tense civilization, for vigor of body or peacefulness of mind. The expensive vanities and unhealthy frivolities, the unsettled state of classes

and their discontent, the exhaustion of one class and the bestiality of another, the unrestrained reproduction of the baser sort, must gather force against the elevating influences, and in time may result in deterioration. It may thus turn out that a future age, though better armed with the weapons of civilization than those which preceded it, is yet fated to be their psychological inferior. Our confident civilization, like that of southern Europe in the classic periods, may in some form, have its periods of reaction, its dark ages. Even with the light of science, the advantages of the printing press, and all the modern appliances for conserving what is gained, it is hardly safe to count on a general advance of the nations and peoples, when all shall stand abreast on the highest known plane of civilization. No doubt, civilization will yet greatly extend itself over the face of the earth, and prevail, perhaps, in all lands; but while certain bodies of mankind are going up in the scale, others are stationary, or going down. The little territory of Europe has illustrated this fact in modern times, and under modern influences. The balance of population is constantly changing, the channels and centres of commerce as constantly shifting; and they probably always will, whether in the general ascent or decline of humanity on earth; hence, there is no guaranty that this see-saw of nations and peoples will not continue, in the future as in the past, to characterize the history of mankind.

We have been looking forward; let us cast a glance in the opposite direction. The ancestors of the highest peoples now on earth, who are so proud of their exaltation, were, only a few hundred years ago, warriors, pirates, plunderers. From very much the same kind of stock, with so little rational promise in it, came the civilized people of Greece and Rome. They were better at breaking heads and trampling down the weak, than in elevating humanity by intention; but elevation did proceed from these people, nevertheless. Precisely the same may be said of the ancient Jews. What kind of people, then, will selection under modern industrial conflict bring into mastery hundreds of years hence? Will it not be rather a plodding, patient, endur-

ing people, with evenness of character and mediocrity of talent? something like a Caucasianized edition of the Chinese character?

I am aware that I found this subject in a good deal of obscurity, and that I have probably done little to place it in clearer light. The attempt has doubtless been more successful in raising difficulties than in settling them. Enough has, perhaps, been presented in definite form to bring in question, at least, the fine optimism of some evolutionists who are looking to the future for a man only a little lower than the angels, and a form of society only a little less seraphic than heaven. The exhaustion of the nervous system, through exclusive devotion to mental occupation under intense competition; the worrying of business men, under similar competition by over-anxiety and care; the physical decline of the rich, through pleasure-seeking and dissipation; the dwarfing and weakening of classes of operatives in unhealthy and routine occupations; the tendency of monopoly and commercial revulsions to obliterate the sturdy, independent yeoman class; the tendency of refined education to stanch the resources of prolificacy;—all these contribute to throw the function of multiplying and filling the earth very largely upon inferior strains of mankind, and render it logically unsafe to trust in “the coming millennium.” It is just as likely that the coming man, who is to spring up under the forces now controlling the prolificacy of peoples, will be personally inferior, as that he will be superior, to the man of to-day.

NOTE.—Some who have been in the habit of contemplating education as a sort of all-potent saviour, may be grieved to find its limitations brought into the foreground, as in this and the preceding chapters; but is it not better to look these limitations squarely in the face, in order to determine the real capabilities of the educational forces, and give them their most efficient direction?

CHAPTER XXXIII.

THE MARRIAGE RELATION.

SECTION 213.—The love of the sexes for each other has been called the master passion. It is not merely that it carries its ends by vigorous self-assertion ; it throws a glamour over the passions, and largely molds their character and directs their action. The half of civilized peoples give probably ninety per cent. of all their energies, directly or indirectly, to this passion and its concomitants ; and the other half are driven by it as with the lash of a tyrant. Men and women are compelled to acknowledge its supremacy, whether they will or no. It governs with seductive smiles and punishes with remorseless torture.

“Ah, tell me what is this which men call love ?

The sweetest pleasure and severest pain.”

When all goes well with this passion and its belongings, the whole passional nature becomes an instrument of music and harmony. When it goes ill with it, the emotional nature suffers revulsion, and there is no longer music but harsh discord. There is no better illustration than this of the dual character of passion : At one pole it is exquisite happiness, at the other pole it is equally exquisite misery ; and the one is in a sense the measure of the other.

Such is the character of the passion which serves as the basis of marriage, and marriage it is which serves as the basis of society. The relation of the sexes has at different times and places taken every possible form we are able to conceive of. These different forms of the sexual status have been determined by the condition of the peoples and their relations to one another. But whatever the form, it has always been an example

of motion in the direction of least resistance, or greatest attraction.

Among the most primitive peoples the relation of the sexes seems to be promiscuous, very much like that of gregarious animals, among which the relation is determined by impulse without sentiment. All the men are after a fashion the husbands of all the women; and all the women are the wives of all the men. There has been no assorting and little orderly exclusion. In some societies the women have several husbands with a limit; and the men have several wives, limited in like manner. The assorting and excluding processes have begun. With regard even to monogamy, its laws and obligation are not uniform in countries where it prevails, being far more exclusive and binding in some than in others. But it is not necessary to go into details. All this has been largely treated of by Lubbock, Tylor, McLennan, Spencer, Morgan, and others. What the inquiry here especially concerns is the hope of getting rid of the discords of marriage in the course of human progress. a/

SECTION 214.—There is an individual sameness among primitive peoples very much in contrast with the diversity among civilized races. Nor are there the same marked differences between the sexes. The men are very much all alike and the women quite alike, with less contrast between the two than prevails among higher peoples. Any man may unite in marriage with any woman without danger of incompatibility; for if any such union is harmonious and happy, any other would have been equally so, at least so far as concerns the permanent relations of temper. Ill-assorted marriages would be quite unknown among such peoples, or if they should occur, their divergence from the even tenor of general conjugal fitness, would be slight. It is true that the relations of such people to one another, whether in marriage or in social relations, may be brutal enough; but the point to be noted is, that the difference between the most happy and the least happy in the relations of sex cannot be great. This is, indeed, a corollary from the general uniformity of temperament and mental cast, the little divergence of

mental taste, the absence of a diversified education, and the actual simplicity of life among the uncivilized.

With progress in civilization all this gradually changes. Peoples mix and the types diverge. The variety of temperament and mental cast becomes almost infinite among people in occupancy of the same territory. Not only individuals, but the sexes, become more and more unlike. "Now, as we go up in the animal scale, we find, that such differentiation has indeed taken place, and that progressively. The sexual differences—that is, the differences between male and female individuals of the same species—become greater and greater as we rise in the scale. They are also greater, we believe, in the higher as compared with the lower races of man, and in the cultivated classes as compared with the uncultivated classes."—(Prof. J. LeConte, *Popular Science Monthly*, December, 1879.) Through the mixing of types and temperaments, and the complication of educational influences, there arises a veritable maze of conditions under which social attractions and repulsions must act. The basis and scope of the affections are also greatly enlarged. Sentiment has become developed, with a multiplication of mental qualities as the diversified sources of pleasure made to flow by fitting response. Friendships are warmer and loves more ardent than among primitive peoples. But this basis of gain is at the same time the basis of loss. If friendship and love may afford more happiness, they may also by inversion or defeat generate more pain. Not only is this inversion or defeat attended with greater misery, but it is more likely to take place among peoples of diversified susceptibility, than among those of simpler constitutional mold. Every point of character that attracts may by inversion repel; the same key may add to the harmony or produce a discord. The more points there are in character, the more complicated is the emotional instrument; the finer the concord when it works in harmony, the greater the discord when not rightly played upon, and the greater the danger of striking the wrong keys.

"If well accorded, the connubial state
From all its strings speaks perfect harmony;
If ill, at home, abroad the harsh notes jar,
And with rude discord wound the ear of peace."

—[*Orestes, in Euripides.*

It is plain from such considerations that, with the progress of civilization, the capabilities of affectional discordance keep pace with the capabilities of affectional concordance. Marriage becomes an institution which may give greater joy, or which may inflict deeper misery. We might rest the matter here on general considerations alone, but owing to the large space which marriage fills in life, it is but proper to look at the subject more in detail.

SECTION 215.—The differences of social position interpose an arbitrary obstacle to the natural action of conjugal affinities. It is true that the educational influence of social life goes to mold the same class into the same social type; but if compatibilities exist across the class-lines, the prejudices of class oppose their meeting in recognized legitimacy; and then there is no choice except between illegitimacy and deprivation.

Another obstacle in the way, more natural and inevitable, is that with increasing complication of character, the conditions of a conjugal love may obtain where the conditions of friendship do not. This is no doubt a prevalent state of things in modern life. It is to be presumed that conjugal love is largely determined by the fitness of relations for reproduction; and when great diversity exists in the constitution of individuals, there is greater reproductive compatibility between some than between others. This has reference both to mind and body. Extremes of some kinds may be fitting for the physical ends of marriage, and just the reverse for friendship. It may be a function of the conjugal instinct to discern the fitting for conjugal relations, when in the natural course of things love follows, and marriage. But when the basis of a lasting friendship is absent, incompatibilities of temper and taste are developed in the close proximity of married life. For these causes of discord—the merely conjugal attracting and the want of friendship repelling—there appears to

be no help under existing conditions ; at least, so far they have not been helped ; and they are rapidly on the increase with the facilities for diversity of culture. Intelligence should of course play the part of guarding against unions without the element of a life-long friendship in them ; yet this very same intelligence is contributing to the possibilities of conjugal discordance by multiplying the points on which differences and repulsion may arise. This is to be observed in the many unfortunate marriages of literary and other intellectual people. If they secure in connubial relations intellectual equality and companionship, there is apt to be no issue, in which case marriage fails of its end. It is a matter of common remark, that the distinctively intellectual marry the unintellectual, and fail completely of companionship, and hence the unhappiness of so many of this class in their marriage relations.

The organic basis of these discordances appears to be greatest in the centers of civilization, greater in the cities than in the country. Even physical divergence between the sexes is increased by the active forces of civilization. While the forms of the two sexes among savages are more alike than among civilized people, they are also more alike among the "lower classes" in civilized countries than among the cultured and well-to-do (Pruner Bey). That is, the head and pelvis approach more nearly to the masculine type. While the average difference in cranial capacity between men and women in the whole of France is one hundred and fifty cubic centimetres, it is two hundred and twenty-one cubic centimetres in Paris alone (Broca). Delauney adds: "The biological considerations we have adduced explain to us why the two sexes tend to diverge from each other as we proceed from the lower to the higher classes. Both sexes among peasants and working people having nearly the same moral and intellectual faculties, they can sympathize with each other, and have no reason for becoming estranged. It is different among the intelligent classes, where the two sexes, in consequence of the increasing pre-eminence of man, not having the same ideas, the same senti-

ments, nor the same tastes, cannot understand each other, and they form separate coteries. Moralists have long taken notice of the separation, which is of force in the family and in the meetings of men and women, and which seems to be increasing from year to year.”—(Popular Science Monthly, December, 1881.)

SECTION 216.—Reproduction requires physical adaptation. In a large headed race, failure in parturition would necessarily eliminate all with inadequate capacity of the pelvic region. And this would be the case whatever the cause of great size of brain. The Eskimo and Lapps have large heads as well as the Teutons, and the pelvic region is also large. But the large pelvis and its corresponding function appropriate a larger share of the vital energies, leaving less for other parts and functions. Development with the necessary nutrition takes the direction which active demand requires, and if the infant's head be large, the demand for a correspondingly large pelvis is absolute. Less supply of nutrition and less scope of activity would remain for the female brain. Under the influences of civilization the brain of woman appears to be losing in size,—not only relatively to man's, but absolutely. “Very curiously, the cranial capacity of the prehistoric women was greater than that of the women of to-day.”—(Delauney). This is the result of the investigations of Broca, Le Bon, and Zametti. But while this is the case, the brain of the civilized man is much larger than the brain of the savage man, having increased in size under the growth of civilization while woman's has diminished, thus rendering the disparity between them very great, and affecting their dispositions and tastes in a corresponding degree.

MM. Broca and Le Bon refer the diminution of woman's head to the small part she takes in the work of civilization. This is probably a case of mistaking effect for cause. Her activity is of a much more diversified character than the activity of savage women, and her brain is doubtless of a much finer quality though it be smaller. It is smaller mainly, no doubt, because man's brain is larger. Her brain is not only smaller

than it is among more primitive peoples, not only smaller than man's, but smaller in proportion to her body. While her body is but eight per cent. smaller than man's, her brain is ten per cent. smaller than his.—(Dr. A. Hughes Bennett, P. S. Mo., Feb., 1880). The facts point to a case of correlation in development, of physiological and anatomical adjustment by means of sexual selection, in which the structure is adapted to relativity of function and the corresponding distribution of energy—the large head of the male fetus necessitating development of the pelvic region, and this in turn necessitating the diminution of the cerebral structure in woman. This is a matter which cannot be decided on the basis of sentimentalism; it must be brought to the solid ground of fact. And so far as the facts enable us to understand it at present, it points to growing incongruity in the mental relations of men and women. If it be true that, under the necessities of sexual adjustment to the increase of man's brain, woman's brain is diminishing, or even remaining the same, or not increasing in size as rapidly as his, then does it follow quite conclusively, that this particular form of evolution is increasing the points on which intellectual companionship between men and women, husbands and wives, cannot find place.

Among the great mass of civilized people, sociability between the sexes is mainly emotional and frivolous. To this there is only a small percentage of exceptions. We confess that even now with his larger head, the average man is not so many-sided in his social and intellectual tastes and cravings, but that he is easily met and satisfied. It is also true that there is exquisite sympathy and communion between men and women in which soul very fully and honestly speaks to soul. True friendships obtain between the sexes; but the point I wish to make is that the mere test of sex applied to an individual for determining the bent of character is not an accurate one. We may regard physical sex as necessarily incisive and distinct; but the sexual characteristics of mind, and the secondary sexual characteristics of the body, show no such definite outline of distinctness. In

some instances women have larger heads, broader shoulders, and narrower pelvis than is normal for the sex, thus approaching the masculine form. There are all grades of masculinity in mind, from the distinctively masculine to that which is barely masculine, or mainly feminine; there are likewise all grades of the feminine qualities of character. There is a prevailing type of mind in men which is of course known as masculine; there is a prevailing type in women which is known as feminine; but our point is, that, while physical sex is distinct, the mental characteristics of each run together and overlap with an indistinctness of outline which often renders it difficult to determine whether in a given case the mind is more of the masculine or feminine type. A considerable part, no doubt, of those ladies who aspire to the usual masculine course of education and sphere of life, and who acquit themselves creditably in the same, have a marked degree of the masculine in their mental constitution. Such are not so apt to marry as the average girl, nor to have families when they do marry. They are not apt to choose intellectual men of positive character for husbands, and consequently, if they have children, are not likely to transmit their own mental peculiarities unimpaired. But whatever tends to eliminate these sexual intermediates, they will no doubt always obtain, in the future as in the present, or even more so, for they seem to be a product of civilized conditions; but their existence does not invalidate the obvious premise of sexual distinctness in mind, which is co-ordinate with the difference in volume between the male and female brain. And if this difference has not already reached its acme, but is becoming greater, there is a mental basis for the growing disparity between the sexes, and consequent increase of points on which the responses of companionship cannot be made.


The existence of incompatibility of temper along with reproductive compatibility is distinctively a phenomenon of civilization, and comes with the great diversity and contrast and consequent extremes which the forces of history have developed in individual character. These contrasts have led to, and are ever leading to, the union of persons of unlike character, even sometimes

to the union of an angel with a brute. We do not insist on the illustrative value of such extreme cases; but even when the incompatibility is not so great, it is a necessary consequence that the close union of marriage usually multiplies the occasions of discord; and married pairs cease to be friendly, who, if they had never married, would never have been unfriendly. I aim in this to state simply a current fact, and no more. The close relations of married life give opportunity for the incompatible to torture each other in manifold and exquisite ways, often without relief—so intractable is human nature under the feeling or fancy of being wronged. Plutarch speaks of the little differences between man and wife which breed aversion; and yet in Greece there was no pretension to companionship between husband and wife. It seems to be the fatality of certain temperaments allied in marriage constantly to “misunderstand” each other. There is an infinity of divergences in taste and temper, for whose liability to discordance there seems to be no efficient remedy.

There are stern moralists who have no sympathy for such as are conjugally unhappy, but only censure, since they hold that mutual adaptation in marriage is purely a voluntary matter. It is true that the obtrusion of infelicities on public attention is a thing to be deprecated; while it is equally true that the will intelligently directed may do much to secure conjugal sympathy and co-operation, but yet more to endure with resignation the absence of them; but the will has its limits, with little power to overcome those little intractabilities of temper which all experience proves to be deeply imbedded in human nature. But even in cases where, under self-control, there is no open bickering, there may be such a want of sympathy in taste and turn as to make life lonesome and dissatisfied. With peace without, there may be an “aching void” within, which, negative though it be, gives positive testimony to the development of the unfitting along with the progress of civilization. Only among couples in the higher planes of society is there unmet craving for sympathy in a multiplicity of tastes, craving for appreciation in the consciousness of worthful aspiration, craving for encouragement and

support in the endeavor which may rise above the beaten paths of mediocrity; and it is futile and foolish to expect to remedy, by a battle with fate, what properly admits only of calm and decent resignation.

SECTION 217.—There are three general methods of looking at the marriage relation: First, the business method, as marriage for property and family considerations; secondly, the deliberative method, as marriage for friendship and companionship; thirdly, the sentimental method, as marriage for love. The morality of the relation is very different as it is looked at from these different points of view. According to the first, the legality of the relation constitutes the essence of its morality. The marriage relation is pure if legally sanctioned, although the parties bound by it have neither love nor friendship for each other. This is the legal view of purity in marriage; and it is so necessarily, since the legal tribunals have neither power nor right to go behind the forms of law. The second view could not regard the legal form as a sufficient warrant for the purity of the relation in the absence of mutual confidence and companionship. The third theoretically regards legal forms as wholly without value to sanctify the relation which love only can sanctify. According to this view, in its extreme form, affection alone justifies the union, and when the affection ceases, the marriage is at an end. This view, however, as exacting as it is, is withal very indefinite, since the term love is generic rather than specific, and love between the sexes is a compound feeling admitting of infinite variations, as one ingredient or another enters into it in larger or smaller proportions. It is also indefinite, owing to the part which interest and the will-power may play, or not play, in giving direction to the affections. Mrs. Fawcett (in *Nineteenth Century*) says: "I can only speak for myself, but I believe I represent the vast majority of women who have worked in this movement, when I say that I believe that the emotional element in the marriage contract is of overwhelming importance; and that anything which puts forward the commercial view of marriage and sinks the spiritual and emotional view is



degrading both to men and women." Very true; but so prominent is the commercial element as the basis and measure of position in society that it has a magical power in determining love. As much as women profess to "marry for love," they usually pass judgment on one another's luck in marriage by its commercial element. And, however much stress is laid on the affection and the affinities of the relation, as elements which alone warrant its purity; yet it is, at the same time, regarded as impure if not formed in accordance with the legal requirements. This is brought out very distinctly in Jane Eyre's personal solution of the problem.

These different views are implicated with a good deal of essential contradiction, and involve the issues on which a long-continued battle will probably yet be fought. The question is not altogether how to get rid of the evils connected with marriage, taking it for granted that marriage is a definite and fixed thing; but the question is really turning upon what constitutes marriage. Society recognizes as the only legitimate object of marriage, the orderly continuation of the species. Healthy and well-organized children, properly disciplined for their places in life, seem fully to answer the end and aim of marriage, so far as society has anything to do with it. But this form of achievement requires several conditions not fully guaranteed by the legal conception of purity in marriage: First, physical and psychological adaptation on the part of the parents for reproduction; secondly, companionship as the necessary basis of co-operation in the proper education of their children; and thirdly, a sufficiency of income for family needs.

An incongruity here is that, while society may be exacting as to the form of marriage, and is deeply interested in the results of the marriage, it has no voice in the matters of fitness and companionship which are the chief agencies in shaping said results. Another incongruity is the natural and fundamental difficulty of securing the union of companionship and reproductive affinity in the same relation. When parents are quite unlike in physical and mental characteristics, their children, if inter-

mediate, are like neither. The offspring may be up to the required standard of physical and mental symmetry, but must, nevertheless, suffer from the perversion and misdirection of home influences. The want of mutual good understanding between parents, not only prevents the reinforcement of each other's influence on their children, but actually renders it antagonistic and discordant, to the lasting detriment of those for whose right education they are chiefly responsible. This is one of the saddest things in modern life, and far more frequent than it appears to be, from the discretion with which it is properly concealed from public view, seldom appearing but in the unavoidable results. Sad as this is, it is an incidental product of mental and social development, wholly unknown in primitive life.

SECTION 218.—There is a form in which culture may complicate the difficulties of social life. Along with the strengthening of the spiritual and artistic faculties is strengthened the repugnance to whatever is merely animal in its nature. The animal and spiritual tendencies in man may be affirmed to be directly opposite in character. The spiritual or refined is upward and expansive in its tendencies; the animal is downward and concentrative. This was the character of the animal in man, when he had little in his nature of the artistic and refined; it is the character of the animal in man still, when he has become a highly intellectual and cultured being. The animal instinct may demand what revolts the higher instincts; and these instincts may enforce a system of repression against the animal in violation of its healthy and normal action. Hence, there is current a phenomenon which pertains solely to the higher forms of social existence. It is the conflict of requirement between morality and physiology concerning quite a large class of invalids. Morality rigidly exacts what physiology condemns; and the former admits of no compromise. Where marriage fails, there must in honor be celibacy; and perpetual celibacy is a violation of organic law; but the physician must recognize the supremacy of the moral precepts which society enforces.

Sex is a physical function which has its physical laws. Life-

long celibacy involves a violation of these laws, which is often attended with unhealthy action and physical and mental pain. But such celibacy is compulsory with very many, and made so by the moral system on which society is based, and without which order in society could not exist. The physical law is overridden by the socio-moral law. Or, it may be put in this way: The performance of every function in accordance with its laws is a moral requirement. The non-performance, therefore, is a breach of morality on that plane in which the function lies; and yet, in society in certain fields of action, such performance of function under conditions possible to the party, would be the height of immorality. The exercise of the maternal function is an obligation demanded by its laws, but morality forbids such exercise of function except on terms with which very many are unable to comply. Thus, morality in the physiological sphere and morality in the sociological sphere may fall into direct antagonism. This is a clear case in which one law is crossed or thwarted by another law, as Paley instances in a general way. And there is no redress for the outrage done to the lower law. Judgment is given against it in the highest known court, and no appeal can be granted. What is fatal is that the lower or physical law cannot be changed in the way of adaptation. Celibacy cannot perpetuate itself by natural selection, or by any other possible process. By its nature celibacy has no part either in inheritance or in transmission. Every ancestor of every person living fulfilled the function in question, and this tendency to fulfillment is one of the organic properties transmitted to offspring. It is one which cannot fall off or abate, for those in whom it is strong more surely fulfill it and transmit it. No matter how imperious the self-control, the tendency still exists, and its perpetual suppression is a sacrifice made by the individual, on the basis of conflict in the constitution of things, to the supremacy of a higher law.

Connected with the refinement and elevation of taste is the great strength of the sexual impulse. It is greater among civilized than among uncivilized peoples. This is no doubt a case

of natural selection. With the development of civilized conditions, the care of a family becomes more of a burthen in which the seeking of pleasures must yield to the discharge of duties, and many would shrink from it if not impelled by an irresistible impulse which sets the fashion. With this greater strength of sexual attraction among civilized people, there is this to be noted, that, with enough there is necessarily too much. This is nature's way of working, because she works by general laws, and the paradox could only be escaped by special interference. The impulse becomes active before the physical system is mature, when its gratification would be an improper thing. And then at maturity and under the sanctions of marriage, its surplusage is very great. And still another incongruity is to be noted. Before marriage there is the necessary effort of constraint and pain of deprivation; after marriage the restraint reacts into license by a natural law, and the longing of deprivation is followed only too generally by the lassitude of satiety. A cloak of sacredness is thrown over marriage, and it is well; but marriage is not a sure guaranty of the virtue that shuns excess.

SECTION 219.—No doubt, all things considered in the history of civilization and the play of its current forces, the exclusive union of one man with one woman is the best possible form of the relation in the highest form of society of which we yet know anything. Yet it appears that this exclusive form of marriage cannot be had without necessitating prostitution in its regular and irregular forms. It prevails alarmingly in the centres of civilization,—in the very shadows of the great churches and schools, where civilization is most concentrated. It accompanies civilization and monogamy everywhere; it has struck its roots down deep into the civilized structure, and it persistently defies every effort to exterminate it, or even to palliate it. Indeed, it is held to be a sort of safety valve for the social system, without which the integrity of society would be in perpetual danger. This assumes that if it were not for legalized and systematic prostitution, the police could hardly be made sufficiently omnipresent in certain localities to afford the needed protection.

It thus comes about that "the supreme type of vice" is at the same time "the most efficient guardian of virtue."—(Lecky). Harlotry is recognized very early in Jewish history. Solon is reported to have established brothels in Athens, for the protection of virtuous women. Cities like Venice, Naples, and Amsterdam, when in the height of their commercial prosperity, seem to have encouraged rather than repressed this vice. Venice even imported courtezans from foreign ports. And in modern times, by municipal action which speaks louder than words, systematic prostitution seems to be regarded as necessary to the orderly maintenance of civilized society, or at least, as an irrepressible part of such society. Mandeville observes: "From what has been said, it is manifest that there is a necessity of sacrificing one part of womankind to preserve the other, and prevent a filthiness of a more heinous nature. From whence I think I may justly conclude (what was the seeming paradox I went about to prove) that chastity may be supported by incontinence, and the best of virtues want the assistance of the worst of vices." Society itself may contribute to this result by a sort of automatic action, as exquisitely shown on philosophical grounds by Dr. Woolsey, who only recognizes the legal as the sanctifying element of marriage, and maintains that divorce should only be granted on scriptural grounds. He believes that wives thus offending and divorced should not be permitted to marry again, even if the inhibition should confirm them in sin: "The question recurs whether it is worth while to save them at the expense of public virtue. Is it not better for society that such a woman lose her ordinary right by way of penalty—even as a citizen sometimes loses his right of office or of suffrage by fighting a duel, or by bribery—than that the honorable state of the matron be degraded by her participation in its privileges."—(Essay on Divorce). In this way, society, in the defense of matronly purity, may legally and formally occasion harlotry; and the justification therefor is clearly the recognized fact that the devil is bound to have a share any way, and that this method would put him off with the least.

It is not to be set down in disparagement of monogamy that prostitution is more conspicuous under it than under polygamy, if, indeed, such be the fact. It may still prevail in polygamy, only in a different form, with a far less average of what is desirable in the relations of men and women. It is not a question of getting rid of evils, but of choosing that form which is attended with the least aggregate of human degradation and misery. Even if acknowledged prostitution be more distinctively bound up with monogamy, still may the advantages of this form of marriage be on the whole so great as to compensate society in general for the curse of prostitution ; and this appears to be the prevailing instinct concerning it, judging by the complacency with which the civil and religious authorities regard the systematic degradation to pariahs of a part of womankind. It is surely a reflection to humble human pride, that the dreary, hopeless life thus led, is a necessary concomitant, if not indeed a necessary condition, of the highest known practical form of the marriage relation.

SECTION 220.—Another wrong, if not evil, is indissolubly bound up with the necessary exclusiveness of monogamic marriage. Reference is made to the suppression of the maternal function by the inexorable decree of society for all women, however well qualified for its discharge, except within the pale of wedlock. This condition many cannot comply with in the lottery of marriage, without debasing themselves in unequal union ; and in localities where women are greatly in the majority, as in most old countries, the deprivation must fall absolutely on the number in excess, embracing some of the most worthy. It is her fitness for the fulfilling of this function that makes woman specifically what she is, and although it is necessary for many to set their houses in order to go through life without fulfilling it, such ordering is suggestively asexual. So manifest is the “intention of nature,” so inevitable are the workings of woman’s emotional nature trained around this function as its centre, that there is no mistaking its importance in her being. An able woman, speaking of the suppression of women’s maternal instincts, says

that they are deprived of that for which "every fibre of their physical and moral being is yearning."—(Mrs. Mary Putnam-Jacobi). This injustice has been the occasion of a good deal of sentimental rant against the despotism of society, and the cruelty of woman to woman, as if every form of injustice in the world could be righted. But in the social system the laws are just as necessary and imperious as elsewhere. There are social necessities involving social wrongs, which are just as inexorable as certain physical necessities which involve physical violence. To permit a woman outside of wedlock to become a mother with approval, or even with toleration, because it is her natural right, would be to unsettle the basis on which monogamy rests. This kind of latitude, in deference to a natural right, could only be allowed with safety, through a total revolution in human nature. The natural right of maternity in a certain class is crushed like a fragile shell under the weight of what society everywhere regards a higher law. The social instincts strike straight to the mark, that the good to be gained by such concession to natural right, would be greatly overbalanced, in the end, by the evil which would grow out of it. That is, the matter resolves itself into a choice of evils, one class or other of which is necessary and inevitable ; and society chooses what it believes, or more properly feels, to be the least.

In an institution like marriage, which is so delicate a poise between conflicting impulses, it becomes the instinctive solicitude of society to fix it in the very grain of the moral constitution by the weightiest sanctions of conventionality and education ; and no exceptions can be permitted. And in this, society is no doubt unequivocally right ; but no matter whether right or wrong in this regard, its course is determined by the nature of the case, and is as inevitable as a decree of fate. Given the monogamic family as the corner stone of the social structure, and there is no redress for this form of injustice ; and we must not forget that it pertains to the highest social system of which we have any historical or practical knowledge.

SECTION 221.—How is it that marriage has come to crystallize into the monogamic form with its concomitants of good and evil? By the conjugal instinct threading its way among resisting forces to find the track of least resistance. It is the play of the counter forces affecting the relation that holds marriage precisely where it is. The sexual impulse, the desire for offspring, the sense of possession which arises from them, the physical limitations of both the sexual impulse and the provision for children defining the boundaries of sexual privilege, the historical antecedents of civilized peoples, and the conditions of existing social life, may be named as a somewhat vague indication of the forces which, by their interaction, have adjusted marriage into its present form. It is a case of natural selection. The monogamic peoples held better together; and whether due to monogamy or not, they were stronger in the conflicts of races and nations, and in this way came to be the leading and dominant peoples of the earth. Given the physical conditions of modern civilization and the character which civilized peoples have acquired through historical development, and monogamy is one of the most natural of institutions. What, then, is the remedy for the evils which accompany it? There is no remedy. They are part of the system, irrevocably bound up with it, and could only be extinguished by revolutionizing the system, and this could only be done through revolution in human nature and its environment. I repeat, there is no remedy. Education and philosophy may refine the sensibilities and teach resignation, but they can do little more. The great difficulty lies in this, that while we adopt measures for individual relief, we are doing what will reduce the tonicity of social life in general and lower the standard of moral heroism, without which no people can be great. The apparent arbitrariness of the marriage bond has been inveighed against as that which stands in the way of remedying mistakes here as elsewhere. But the assumption here is at fault. There is a difference in the spheres of human life in which blunders may be made; but wherever made, the fitting penalty is quite sure to follow. And in the matter of marriage,

experience could not be trusted to teach a great deal; second, third, and fourth marriages are not as likely to be happy as the first. And in this weighty affair of life, one generation appears to learn nothing of another.

SECTION 222.—A class of reformers suppose that harmony and right can be secured in the affectional sphere by means of freedom. On general principles, “freedom” is accepted as the panacea for all the ills which are in any way bound up with despotism. Within limits, freedom is a very desirable thing, but it has limits which must be scrupulously observed, because freedom has reference only to motion under resistance, and divergence to either side fetches up against obstructions, with resulting violence, discord, and pain. So-called freedom would only escape the usual besetments by meeting with others equally formidable. Take down the barriers which social opinion now interposes, as unjust and tyrannical as these barriers often are in their effects, and others equally tyrannical must be established, or discord and deprivation would arise even worse than any which now exist. This is proved by the experiments in freedom which have nominally succeeded, as well as by those which have speedily failed. The Perfectionists have only succeeded in making a change without securing freedom, since the new order is maintained only by exclusion from “the world” under a spiritual despotism made operative through open criticism, which coerces the life of the people. [Since this was written, the Oneida Community has abandoned complex marriage, and adopted marriage and celibacy as they prevail in the Christian world at large.]

Hardly any word is so vague as that of freedom; and its application to the affectional sphere is very limited. If love alone sanctifies the conjugal relation, who shall decide on the right measure and mixture of this feeling, so varied as it is in the elements of sentiment and passion which compose it? “The parties concerned.” Very well; but they may to-morrow reverse the decision of to-day; and they are not isolated, self-sovereign creatures, but are bound up with others in the same society,

which is compelled in behalf of its own integrity to make note of their example and their relations to others. And then there are two of them; and though they agree to-day, they may differ to-morrow, one to maintain the union, the other to sever it. Which decision shall prevail? Unlike a temporary co-partnership, the nature of the conjugal relation is so bound up with engrossing affection and permanence in results, that it does not admit of any approach to caprice or vacillation, and society provides against it, by recognizing the business and practical side of marriage. "But the cold and rigid ruling of society causes suffering." Doubtless; but it is the only way to prevent still greater suffering. In matters of the heart, the idea of the individual being legitimately sovereign to have his own way at his own cost, is absurd. Conjugal separation at the instance of but one of the parties cannot take place at his or her own cost, any more than the union can be maintained by one of the parties at his or her own cost, when the other wishes it broken. There is despotism on either horn of the dilemma, and the precious bit of freedom there is in it, is in deciding which shall be taken.

Loving freely according to wisdom is common ground on which all meet; but there is a very great difference of opinion as to what constitutes the wisdom thus summoned to limit freedom. It is upon this the entire question turns. We believe that the system which has grown up out of experience is practically the wisest. This may change and does change, but rarely by conscious intention. Changes in the system which governs the affectional relations come about gradually, in consequence of changes in the conditions which necessitate readjustment. With the progress of civilizations change is almost sure to take place in the conjugal relations. And the slight shades of difference in the civilizations of different nationalities are accompanied with shades of difference in the affectional relation of the sexes. Marriage is not just the same as conventionally determined in Italy, France, England, and America. The social status of the maid before marriage, and that of the wife

after marriage, vary greatly. The species monogamy has differentiated into distinct varieties. Every people must, from the nature of the case, decide on the wisdom of the relation for itself; and it will do it by instinct growing out of practice rather than by discursive methods. All the changes which the relation of the sexes has undergone, have come through experience; and whatever the changes of the future, they must pass this ordeal. Theory will not affect it; society, whether in the sphere of freedom or morals, admits of nothing absolute. Wisdom consists simply in finding the most peaceful balancing of the discordant or opposing forces in the sphere of passion and interest. Thus far the term freedom applies, but no farther. As well talk of the freedom of the planets to move in their orbits as to talk of freedom of the affections in actual life. The planet might like to fly off into space, because it would be so nice to abandon the old commonplace orbit and travel into new celestial regions, but the attraction of gravitation will not permit it. Passions which readily invest themselves with the seeming of sentimental sanctity, may want to set at defiance the conventionalities of sexual regulation, but they are curbed in lawlessness by the co-operative action of stronger social forces. But however high and holy the aims which are pursued in the name of affectional freedom, they must prove to be abortions, since despotism is every whit as true of the affections as freedom; and no passion or sentiment can be understood by looking only at one side of it, when it has two sides as unlike as the terms of any antithesis.

Life is but the picking of one's way through the tangled mazes of contradiction. How almost every act of life, except the merest commonplace and routine, involves the balancing of considerations! Wisdom consists in finding the line, however devious or however straight and narrow, of least conflict with the inevitable. For, whoever loses this line fetches up against some obstruction—he literally bumps his head and suffers for his folly. The limitations so hedge in conduct on every side that penalty always follows excess of momentum in any direction. Whenever we have found out what wisdom requires, in order to make the

most of life for all, we have found out precisely what morality is, and *vice versa*; and therein is accurately defined the range and sweep of social freedom. Morality itself, as we have seen (Chapter XII.), is but the resultant of conflicting social forces.

We often allow ourselves to be deluded with specious names. The doctrine of affectional freedom would never be pressed as a remedy for the evils associated with marriage, but for the glamour of theory and the mental habit of looking too intensely at certain phases of the subject, to the exclusion by inattention of other phases equally important. When the mind becomes steadily engrossed with the wrongs which seem to be so indissolubly bound up with what appears to be social despotism and cruelty, it is natural enough to infer that freedom must be the means of redressing the wrong. Such logic may be perfectly unexceptionable, admitting its premises; but its premises are at fault. It totally mistakes the possibilities of human nature, and is never the method of balanced minds thoroughly disciplined. It may be, and usually is, the method of people of generous sympathies, who are evidently sincere and thoroughly in earnest; but this does not sanctify the character of the method. It was the doctrine of the French Revolution that freedom was the panacea for all social and political wrongs; and the delusion has not yet passed away. On the contrary, like many another mistaken view, it appears, under the stimulus of goading wrongs, to have undergone a sort of development, having reached the stages at present known as Anarchism and Nihilism.

The doctrine of "individual sovereignty" is a one-sided dream, and "affectional freedom" is but a corollary of that dream. They are part of the general effort to escape corporate control under the acute consciousness of individual suffering which is developed under every high civilization. There is irresistible fascination in the idea that the "perfect liberty of each is compatible with the perfect liberty of all."—(Fichte.) But it is only true by construing the word "perfect" to mean *qualified*. It is, on the contrary, the fact that, "perfect freedom obtains in nothing human; there are obstructions on every hand, not phys-

ical only, but also intellectual and moral.”—(Walker.) It is a profound view of the subject, which no uncompromising advocate of social freedom and sexual equality has yet mastered, that “no political [or social] right is absolute and of universal application,—each having its conditions, qualifications, and limitations.”—(Parkman.)

We must not lose sight of the opposing necessities in human nature, through which life must needs thread its way with the least friction and contact. How completely these opposing forces exert a strain directly against each other, is seen in marriage itself. One set impels the individual toward marriage, the other holds him back. The satisfaction which marriage promises can only be had at certain cost. Marriage involves self-denial as the condition of its favors. The privileges and gains of married life can only be enjoyed by the sacrifice of certain privileges and immunities of single life. And then, within the bond, there are counter sets of forces constantly in action; the one to maintain the integrity of the union, the other to disrupt it. Social position, the sexual impulses, the philoprogenitive instincts, children, bind together; difference of tastes, divergence of personal interests, rebellion against the subordination of one to the other in so close a union, rend asunder. In the greater number of cases, the disrupting forces may be so slight as scarcely to come into consciousness; in many, the two opposing sets are quite equally balanced, and life is distracted with the cruel contest; in others the explosive forces prevail, and the bond is broken. The increase of candidates for divorce bears testimony to the increasing dissatisfaction in marriage. It is here as among laborers, discontent grows with general intelligence, and the consciousness of possible change. Under this increase of dissatisfaction, the divorce laws are being gradually made more liberal. And all this is the outcome of what? Of the continual diversification of temperament and taste through the mixing of peoples, the spread of general intelligence, and the multiplication of human interests. Here we find marriage undergoing a gradual change, slow though it be. With the con-

tinual multiplication of the causes of this change, it is likely still to go on; and by the accumulation of these small modifications, the adjustment of relations between men and women in the future may be different from what it is at present.

SECTION 223.—Quotations might be given from numerous authors and journals to the effect that the existing form of monogamic marriage is the relic of a different order of things from that which is now coming into existence, and that the form of the family it involves is not to be accepted as a finality. These are not fanatical writers but, for the most part, thinking men and women who have endeavored to weigh the difficulties of the subject and estimate the drift of social movement; and who have not committed themselves to premature or visionary reforms. They regard the present constitution of the family as patriarchal or feudal, with conventional bonds resting on mere relationship, while the higher constitution would be that which should rest on friendship and congeniality of tastes. It is anticipated that the relations of men and women will undergo change and assume a higher form as the necessary requisite of the more exalted form of society which is confidently expected. "This theory is that we are substituting for the old involuntary family affections of our forefathers, voluntary affections based on the infinite veracities, in whose precise language, people will, in the future, care for one another, not according to the fortuitous connection of a common ancestry, but will love or hate one another as they find one another amiable or detestable; that parents will care for their children as they are to their taste or not, and children will ground their feelings toward their parents on the same circumstance. We shall no more see the disgusting complications which now arise in families from incompatibility of temper, but the most frank relations in the world will take the place of the false and hypocritical ones established by tradition."—(*The Nation*, April 15, 1869).

But these writers have no doubt contemplated the subject under the bias of the optimism which has been so long the fashion, and have in consequence assumed possibilities which do

not exist. This is shown by the naïve remark of one of them that, "Mankind will be happy, and if that is not possible with marriage as it is, then must the form of marriage be changed." —(*Die Neue Zeit*, January 22, 1870).

The following appears to be a careful statement which is given by one who has studied this subject deeply: "When the fact is accepted that the family has passed through four successive forms, and is now in a fifth, the question at once arises whether this form can be permanent in the future. The only answer that can be given is, that it must advance as society advances, and change as society changes, even as it has done in the past. It is the creature of the social system, and will reflect its culture. As the monogamian family has improved greatly since the commencement of civilization, and very sensibly in modern times, it is at least supposable that it is capable of still further improvement until the equality of the sexes is attained. Should the monogamian family, in the distant future, fail to answer the requirements of society, assuming the continuous progress of civilization, it is impossible to predict the nature of its successor." —(L. H. Morgan, *Ancient Society*, 491-2). No doubt marriage will change, to adapt itself to the conditions of society; and this will take place whether society progress, or whether it "develop in the wrong direction," as the Duke of Argyll expresses it. Morgan's anticipation of future improvement in society is not quite unqualified; but all are not so careful. The unreserved anticipation of future improvement in society as the basis of improvement in marriage, may be at fault in various ways. It assumes a general psychological elevation of the race which is not to be counted on, as we think has been sufficiently shown in the last two chapters. It appears furthermore to overlook the fact that the changes now taking place in marriage quite resemble the changes it underwent in Roman society, during the latter part of the Republic and the beginning of the Empire. Marriage there differentiated into different forms, from the most rigid possible to the most lax; that is, within the pale of wedlock, there was great progress in the direction of freedom.

But these changes in marriage corresponded with the decline of Roman society; and it may be a question whether any such advance towards freedom in the marriage relation is compatible with that moral strength which preserves a people and makes it great. It is more apt to be allied with the intoxication of superabundance and high life, with luxury, pleasure-seeking, degeneracy. It is incompatible with the severer virtues, which deny the individual self for corporate good; and it is not, perhaps, to be welcomed as an omen of unexceptionable improvement. It led to the depravation and extinction of the old Greek and Roman stock; and this should be a warning to us that the present tendencies toward social freedom are not so much an earnest of coming elevation as of coming degeneracy.

What the future relations of men and women will be, it is not possible now to forecast; but one thing is sure, be they what they may, there will still be occasions of injustice and discord, and still many a heart will ache. There will always be competition for the affections of the other sex, under whatever form of marriage, and winners and losers as now; and when, frequently, the winners will be the greater losers, and the losers really the winners, with suffering whether they lose or win. It would not be warrantable to infer from the fact—if fact it be—that discord and unhappiness in marriage are greater now than in the earlier stages of our civilization, that, therefore, they are to become still greater, whatever the form of the relation; but I hold it to be impossible to conceive of any adjustment of these relations on the basis of human nature, without opening the door on one side or other to the entry of disturbing elements. There are constitutional antitheses and contradictions in the emotional nature, which will forever prevent the affectional harmony which visionaries hope for. Sexual love is a compound of physical and spiritual elements, which, as we have seen, involves the paradox that a sufficiency for the end necessarily implies a redundancy. The quite inexhaustible resources of the spiritual are necessarily stanchd in large measure by the stringent limitations and exacting nature of the physical, and the two cannot

be divorced from each other. Add to this the increasing size of the male head, if continued evolution in this direction is to be admitted, involving by correlation a change in the physical build and mental constitution of woman (section 216), thus ever making the difference wider between the sexes, and ever preserving the conditions of reproduction at the expense of the common basis of companionship. Still add that with the refinement and culture of peoples, the pain of childbirth (unless mitigated by anæsthetics) and the frailty of infancy increase; and if there be greater joy in welcome births, it comes with greater solicitude and pain. Regard it as we may, we cannot elevate the crests of the waves without deepening the hollows between; and wherever the field of sensibility is exquisite, we may be sure that the ecstasy of enjoyment and the despair of suffering are very near to each other. However much our optimistic bent may incline us to envelop the future in an effulgence of bliss, we must, nevertheless, come in our cooler moments to the facts of recorded and present experience, and these compel us to reject the notion of perfect harmony in the affectional relations at any time or under any circumstances, as a Utopian dream.

CHAPTER XXXIV.

THE RELIGIOUS CONSOLATIONS.

SECTION 224.—Another field in which feeling has played a large part in relation to happiness, is that of religion. The point with which we are here concerned is, whether religion becomes the source of a greater or less average of happiness as the world grows older. It has always had its two sides. Religious feel-

ing and religious rites, no doubt, had their origin in fear and dread, in the interests of hope and confidence. The one pervading feature of primitive religions, whether revealed in history or observed by modern travelers, is that the rites and observances thereof are deprecatory. The peoples fear their gods. Their notion of the beings, whom they imagine controlling the elements, and appointing the events of human life, is that they are inclined to malignancy, and looking out for chances and pretexts to do harm. Hence, the great object of primitive religious rites is to please and appease these divinities. In primitive religions, the positive element appears to be dread of divine malice; and the negative element the assurance of divine favor. But, while there is a considerable degree of apprehension, fear, and terror associated with primitive religion, which it is difficult for the civilized mind to measure, it is probably not so great as is sometimes supposed. The devotees cringe to their deities, but not without believing that their deities may also cringe to them. If the required good is not forthcoming, they chastize their gods by inflicting indignity upon them, or upon their images. But, as among primitive peoples there is so little assurance of regularity, and life so completely at the mercy of the elements and the caprices of fortune, over all of which their religion broods, it has to be admitted that it is almost, or quite wholly, made up of the conflicting emotions of hope and fear, with the joy of success and the gloom of disappointment. But the primitive man is not so sensitive as the civilized man, and the contrast in these emotions is not so sharply drawn as further on in the scale of mental development. He neither enjoys so much, nor suffers so much, whether it be of the religious or any other emotion.

SECTION 225.—When the conception of continued existence after death came to be added to the stock of religious ideas, there appears to have been a clear gain to the side of happiness. Still, in early times, the notion of the future life does not appear to have been a flattering one. The departed were only shades—such beings as the living saw in their dreams no doubt—and not capable of a full measure of enjoyment, such as was experi-

enced in real life. They would no doubt have made the future life an elysium of bliss, if they had had their own unrestrained way with it, but they were hedged in by the limits of their experience; and they peopled the nether world only with the shades of human beings. This, however, changed in time, and the future life came to be looked forward to for greater happiness than is possible on earth. The admission of the natural body, improved and glorified, into the future state of existence presented something tangible, around which the fondness of anticipation might cluster its creations. But, unfortunately, the nerves of sense may suffer as well as enjoy;—and still religion kept up its duality of balances. Even in the realm of faith the gain must be offset with an equal loss—such is the perversity of human nature. Along with the heaven of bliss was conceived the hell of infinite and everlasting torture; and along with angels and ministering spirits came demons and devils, and the religious mind was an arena of perpetual warfare.

Those who held these views were, doubtless, more sensitive than primitive people, without being remarkable for tenderness of sympathy, else such dogmas must have ensured for them the dread presence of mental agony all through life. It is no doubt a principle of compensation to be thankful for, that the mind which suffers greatly from faith in the dreary dogmas, is almost certain in the end to reject them. We live in a period when the weird and lugubrious are departing. Witches and malignant spirits are not much abroad now; the devil is well nigh chained; hell is subjected to the modern improvements, and it is no longer the terrible place it was. But alas, with the abatement of hell comes also an abatement of heaven! The life hereafter is conceived in the midst of civilization, as among less cultured peoples, to be only a continuation of this life with little change in any way; and following fast upon the heels of this is the growing suspicion that there is no hereafter at all. So that in getting rid of the terrible, its antithesis seems equally ready to depart. “Heaven and hell are corollaries which rise and fall together.”—(Leslie Stephen). I aim but to state a fact as per-

ceived by accurate observers, and which almost any one may verify for himself.

Those who are most advanced in intelligence indulge little in the ecstasies of religion. No one can shout glory in the sure consciousness of the remission of his sins, unless he first believes that his soul is in danger of being lost on account of sin. With the dread of the devil and of hell goes the inexpressible joy of the soul's consciousness of salvation. Without first the agony there is no basis for the rapture; and the two very well illustrate the equal and opposite poles of the emotional magnet.

During the ages which may be regarded as theological, when there was the greatest intensity of religious feelings, religious disputes assumed their bitterest form, and led not only to alienation of feeling and social hostility, but to the most cruel and desolating of wars. With the increase of secular feeling, and the decrease of intensity in religious, or rather theological, feeling, hostility is much less likely to break out and lead to dire results. The leveling down in the sway and intensity of the theological animus is accompanied with the equal leveling down of its ecstasies and its discordances. The hollows of the waves are not so deep because the crests do not rise so high.

In times past the consolations of religion have been effective to brace up the broken spirit of oppressed creatures whose life was one continued scene of cheerless reality. If life was poor Heaven was made rich. The crushed on earth would be the strong in Heaven, and the bond would be the free. But the invasion of the theological frame of mind by the secular is drying up this fountain of human happiness. This would be a loss not so much to be regretted, if we were sure that there is less need for such comfort now than in former times. Heaven need not be so rich, if life on earth has become richer, and still the average of happiness in life would be maintained. Man's mastery through discovery and invention of the forces of nature redounds to his good in many ways, but it is nevertheless narrowing the field for providential interference, changing the character

of religious expectancy, and depriving it of many of its old forms of consolation. But while the earthly life is in many respects improved by the appliances of civilization in the benefits of which all share, there are yet other respects in which there is as much need as ever for the consolation which religion can scarcely longer give, and which, being constantly sought, as constantly eludes the pursuer.

But we may easily estimate too highly the consolations afforded by religion in the past. Hell and purgatory and the displeasure of avenging deities acted on the fears of believers, and their influence was depressing. The decay of the terrible dogmas may appear to be a great gain, and yet, although they were conceived in gloom, and in gloom held sway, we are quite inclined to overrate the unhappiness they caused. The mind that could entertain such dogmas in full consciousness, was not a mind to take great trouble from the contemplation of their consequences. Doubtless with many the fate of the damned was felt to be a satisfactory result of persistent refusal of the means of grace, and the thought of the torments of the wicked may have given pleasure rather than pain. This was probably the prevailing feeling in Christendom for centuries. Only on this supposition can we understand the genesis and acceptance of such beliefs. But it is to be noted that however terrible the dogmas of purgatory and hell may have been pictured for the alarm of wicked people, there was always provided a ready means of escape, which did not necessarily require the self-denial which practical virtue implies; and those whom such dogmas really affected could easily secure their escape from eternal misery. And since those ages were theological, quite all had such connection with the church as secured their own salvation; and then if the thought of the sufferings of the unredeemed was to increase the happiness of the redeemed, it would be waste sympathy on our part to regret the effect of the terrible dogmas on human happiness. The little sensibility of those times may have required a stimulus of this sort; and the pleasure derived therefrom, even if coarse, like that of the gladiatorial shows

and the burning of heretics, may even have overbalanced any misery they may have caused. Peter Lombard taught that the contemplation of the sufferings of the damned would enhance the joy of the redeemed. Very near our own times, Jonathan Edwards said: "The view of the misery of the damned will double the ardor of the love and gratitude of the saints in heaven." And "the sight of hell-torments will incite the happiness of the saints forever; and it will make them more sensible of their own happiness; it will give them a more lively relish of it! Oh, it will make them sensible how happy they are!" This view does not assume that the saints will have much tenderness of sympathy—not so much as people in the flesh are usually supposed to have. Under the prevalence of greater sympathy, and sensibility, and instinctive rationality in our own times, the retention of such dogmas would indeed be terrible; and their decline is becoming a necessity to prevent the absolute augmentation of human misery through their direct agency.

In estimating the drift of what is popularly understood as religion, faith, worship, we may safely say that while the dogmas have less power to alarm than in times past, they have also less power to console, and that this tendency is still in progress. The loss of the power to curse in the name of dogmatic religion goes with the loss of power to bless; and the end is not yet.

SECTION 226.—The professed religious people of the civilized world are at present somewhat indistinctly divided into two great parties, the one asserting the right of private judgment, the other denying it. It may be a question whether Protestantism, in stimulating the exercise of this cardinal principle of freedom, is doing more for the happiness of the people than the papal system in seeking to allay it. Of course, the conditions of happiness are not the same for all. Granted the intelligence which led to Protestantism, then is the more liberal system a necessary one in the interest of happiness. But a Roman Catholic will tell us that the faith, and confidence, and peace which his church cherishes in its people, are better than the wrangle of a thou-

sand Protestant sects and the comfortless doubts to which Protestantism leads.

The cultured, intelligent, truth-seeking bent of mind has its joys, but therefor it must suffer the pain of doubt, and very often the pain of unsettling and casting off old and cherished beliefs. It suffers ills which the mind clothed in perpetual faith knows nothing of. But on the other hand, the penalty of peace to the model papist is mental stupor so far as the highest functions of our intellectual nature are concerned. So that while the one retains, he cannot gain; and while the other gains, he must lose.

But this is not a question of what we will, or will not. We might demonstrate that the filial trust which the Catholic routine secures is superior, and above all things desirable; yet there would be no possible way of making it universal. We are driven by an inexorable fatality along the pathway of evolution, and we must travel it whether we will or not. Admit that Protestantism will be resolved eventually into Romanism on the one side and into the religion of science on the other, and that in the end the religion of science will prevail;—what is to be hoped from the consolations of such religion as science shall embody? It would be premature to attempt to point out its gains and losses; but both there certainly will be. With progress in science, faith in immortality is evidently weakening, while the religious interests being weaned from the next world are turning with wiser concern to this. There is apparently less theology and more catholic fellow feeling among mankind. If the faith in immortality should be lost, it will be a loss which in the present state of the human mind, nothing can fully repair. But the intense egotism of individuality may abate somewhat with the progress of knowledge, and there may be compensation for loss in the ideal by ameliorations in the actual. The energy now given to the theoretical and practical branches of the theological system, may then be given to ascertaining the laws of existence and adopting practical measures in accordance therewith to promote the welfare of man individually and collectively. But while something, perhaps much, is to be hoped for from this diversion of

human energy from the interests of a class to the interests of men in general, it will no doubt have more than it can do to maintain the social status unimpaired against the moral cankers of an advancing civilization.

Should there ever be a reign of science over mankind in general, religion will no doubt be less individual and egoistic than in the past, and at the same time more sympathetic and fraternal. But even here is a loss for which it will be difficult to find full compensation. The law-deity of science is a cold abstraction compared with the anthropomorphic deity of theology. The former can be looked to for none of that sweet comfort which comes of the consciousness that Providence has a personal interest in us as individuals and cares for us as a parent cares for his children. All that science can promise in doubtful compensation, is that, for the loss of this ideal personal sympathy from above, there shall be more real working sympathy between man and man, with improvement in the conditions of his life, affording more diversity of opportunity for happy exertion and warranting life actually better.

If our view be correct, that the future man is not to be a philosopher, but only a being of mediocrity, it might be inferred that he will cling to some form of dogma throughout all the future as throughout all the past. But we cannot be at all sure of this. Not the philosophical and cultured only become skeptical of the prevailing theological systems; the working people of many countries, England, France, Germany, and this country, are becoming quite extensively afflicted with the leaven of skepticism. It seems to spring largely out of the modern control of the forces of nature in subjecting them to human uses quite independent of any direct assistance from the gods. It is in the air, and like a contagion seizes on the minds of common people. And so far as the theological bias of such long standing permits, the ready common sense of the plain, practical, uncultured classes draws inferences unfriendly to priestly pretensions.

Now, if all mankind could become highly artistic, sympa-

thetic, and philosophical, with an abundance of means for the realization of ideals, we might imagine them forming a society so exalted that they could get along very well without the religious consolations of which there has heretofore been such great need. But no such society is possible; and even if scientific in form, it must be composed mainly of mediocre people; and if these may lose their religion, as they are losing it under the adverse education of industrial life itself, the loss is a real one, for which it is difficult to conceive an adequate compensation.

CHAPTER XXXV.

PAIN AND PLEASURE INSEPARABLE.

SECTION 227.—Without a complete change in the constitution of our emotional nature, pleasure and happiness unmixed with pain are not possible. The Utopia of which optimists dream—a state of unalloyed bliss—finds no warrant in any rational interpretation of human experience. Without experience of pain we should have no conception of pleasure. “Il y a une connexion nécessaire entre le plaisir et la douleur; il est impossible de concevoir que la douleur ne soit pas là où est le plaisir.”—(Bouillier). Voysey, quoted by Dr. Yeo, says: “To enjoy pleasure at all there must be alternation with sensations more or less painful.” Hinton observes: “Whether it may seem paradoxical or not, it is a fact in our nature that, without endurance, life ceases to be enjoyable; without pains accepted, pleasure will not be permanent.”—(Mystery of Pain). Paley puts the idea quaintly; after speaking of the pain as the price of the pleasure which follows its cessation, he says: “I am far from

being sure, that a man is not a gainer by suffering a moderate interruption of bodily ease for a couple of hours out of the four-and-twenty."

We are only conscious at all by transition from one state of mind to another.—(Section 77). Consciousness owes its existence to the differences of feeling which accompany the succession of mental changes. Without unlikeness between one mental action and another, there would be but one thought, and consequently no thought at all, for want of the differences which give definition. With only one idea, if it were possible, we should be worse off than driveling idiots. "To be always sensible of the same thing is not to be sensible of anything."—(Hobbes). This difference between thoughts runs through all grades from the merest difference to perfect contrast or opposition. Hence, the axiom in logic that we do not know what any given thought is until we know what it is not. "We only know anything by knowing it as distinguished from something else; all consciousness is of difference; two objects are the smallest number required to constitute consciousness; a thing is only seen to be what it is by contrast with what it is not."—(J. S. Mill). This is the law of every form of conscious feeling; and as we have already seen, in listing the emotional opposites of the human mind (Section 80), every feeling has its antithesis.

SECTION 228.—The relativity of pleasure and pain is proved by the commonest experiences of life. The youth who is in possession of perfect health and has never been sick, does not realize the wealth of his possession. There is a scale of health measured by degrees, and one who has not had experience on a long range of the scale is not capable of estimating the measure of such health experiences as differ only by small degrees. While a slight indisposition may make a usually well person miserable, the bed-ridden subject is happy only to be able to look out of the window and see the sunshine and the fields; and if barely able to walk about and enjoy these luxuries, he is in an ecstasy of delight. The strong one is miserable and the feeble one is happy because the feelings of each are determined

by comparison with previous experiences. Dr. George M. Beard observes: "Perfect health of itself is not a condition of positive happiness, and is not at all essential to happiness. The happiest persons I have seen, or expect to see, were partial invalids." And further on: "The mystery, long noted by physicians, that patients who are half cured of a severe malady are more grateful than even those fully cured, is explained by the fact that we need a certain degree of debility, a limited and bearable amount of pain or discomfort, to keep us constantly mindful, by contrast, of the pleasantness of our present state as compared with what it has been or might be."—(*American Nervousness*, 277-8). Feeling in general, like the sense of temperature, is relative, and is aptly paralleled by the well-known experiment which is used to illustrate the relativity of the sense of temperature. The water in the intermediate basin is either warm or cold to the touch as determined by the relative condition of the nerves that test it; just as in life, the same experiences may give either pleasure or pain, owing to the condition in which the receptivity of the subject may be.

The relativity of our estimate of pleasure and pain is brought into definite shape, and given even mathematical expression by Fechner, and is thus summarized by Henry Farquhar (*Popular Science Monthly*, August, 1879: "Sensibility to grief and joy, as the experience of every one will attest, becomes feebler with an increase of the amount sustained. So, a faint sound can be heard only in comparative silence, and our footsteps surprise us by their resounding din on the floor of an empty hall, though no louder, as reflection easily assures, than when the hall is filled with a bustling multitude. So, though the stars give us their whole light in the daytime, our eye, with the stimulus of an illuminated atmosphere, fails to discover them. This law, as stated by Fechner, is, in mathematical language, the excitement of a nerve varies in arithmetical progression as the exciting cause varies in geometrical progression, or degrees of sensation correspond to logarithms of the quantities perceived." A like formula of the law is that, sensation is the logarithm of stimu-

lus; but it is not at all in the nature of the emotional sphere, owing to individual idiosyncrasy and variability of mood, to admit of any such mathematical precision, and we can only accept Fechner's law as indicating, in a general way, the relative proportion of stimulus to feeling.

It is on a principle nearly related to this, that people may become so used to painful experiences as to be comparatively little affected by them; while on the other hand, when not so used to them, a little adverse experience may cause pain apparently out of all proportion to its cause. The same is to an equal extent true of pleasurable experiences. Even pessimists must admit of pleasures which have little or no direct connection with pain, as, a ramble in the groves, a walk by the sea, viewing a beautiful landscape. But those who are in the presence of such scenes every day of their lives become indifferent to them. The impression cannot retain its freshness under frequent repetition. Should these same people be confined in prison or among the dingy walls of the city, they would come suddenly to an appreciation of rural beauty. So, thousands enjoy civil liberty and never think of the boon; but three years service under military law has brought many a one to a sense of the value of civil freedom. Thus, what seems to be unmixed good may not be appreciated until it appears in the light of a contrast, and by such contrast is it intensified even when appreciated.

Those who are born rich cannot thoroughly appreciate the value of having the means wherewith to do. Only those can who have suffered from limitation in this respect. To a person in want, a hundred dollars may be a godsend, giving inexpressible joy; to the wealthy man it is only a bagatelle which stirs not the smallest ripple of emotion. There is not the same difference in the happiness of the different orders of society as the difference in their outward condition would indicate. It is relative with classes, as it often is with individuals. Many a one will "fly to pieces" at some trivial mishap, who would meet a great calamity with the bearing of a hero. Members of the

humble classes have their moderate aims in life, and success brings pleasure and disappointment pain, just as in the higher ranks where the stake appears to be much greater. The wealthy are greatly envied, and often by those who are better off than themselves in the real enjoyments of life. It is quite true "that luxury adds less to the ordinary enjoyment of life than most men struggling with penury suppose: there are special delights attending the hard-earned meal, and the eagerly expected amusement, which must be weighed against the profuser pleasures that the rich can command; so that we may fairly conclude that increase of happiness is very far from keeping pace with increase of wealth."—(Sidgwick, *Methods of Ethics*, 144). Great wealth performs the double function of bringing anxiety and perplexity on the one hand, and frivolity, indolence, and *ennui* on the other. Usually one member of the family cares for the estate, and the rest have nothing to do but to ape the prevalent ways of enjoying it. And the trouble with this class in finding enjoyment is, that constant satiety is not compatible with the zest of enjoyment which flows from the gratification of sharpened appetite. There is no jubilant feeling, for want of the subjective contrast from which such feeling springs. The lady who puts on a fine dress but once a week enjoys it more, feels finer, than if she went sumptuously clothed every day. The torture of the luxurious is to find contrast, not only in the style of life, but in the feeling which accompanies it. Fear and apprehension lend greater distinctiveness to hope. There is no rest for those who never get tired. And for the weariness and disgust of satiety there is absolutely no remedy but the diversion to honest occupation,—and this rests under the inevitable ban of genteel scorn. The holidays of the working people, by virtue of their contrast with the every day experiences of life, have for them a freshness and buoyancy which the wealthy idle and the sated pleasure-hunters seldom enjoy. It is the "rarity gives leisure half its charm." A gambol on the lawn or a stroll by the lakeside rests and refreshes the children of honest toil, who can afford, indeed, to be little envious of the dead

level in high life so at variance with the conditions of a high order of enjoyment. The exclusive pursuit of pleasure itself proves that it is no absolute thing to be had without price. I say no new thing; the law is understood even by those who set it at defiance. Seneca is thus on record concerning pleasures: "The more in number and the greater they are, the more general and absolute a slave is the servant of them. Let the common people pronounce him as happy as they please, he pays his liberty for his delights, and sells himself for what he buys."

SECTION 229.—The pain accompanying desire is attended with anticipation, which renders desire of mixed character, containing both pleasure and pain,—the measure of intensity and of hope connected therewith determining whether pleasure or pain shall predominate. While the earliest experience associated with motion of the muscles teaches to avoid pain and seek pleasure, this is what every one does all through life with more or less wisdom. In simple forms of life it is easy enough, but more difficult in complicated forms placed within a complicated environment, to find the pleasurable and avoid the painful. Add to this, that we are formed under the exercise of choice, getting our physical and mental constitution from development under the action of seeking the pleasurable and avoiding the painful, and surely we have warrantable ground for the doctrine that the pleasures of existence far outweigh its pains. It is an example of motion in the direction of least resistance. This might not, however, decide whether or not the environment is calculated to give pleasure rather than pain; but when we reflect that the environment itself is the product of motion in the direction of least resistance, there is some warrant for the assumption of a necessary prevalence of harmonious over discordant action.

Mr. Sully rejects the pleasurability of function as an element which tells for the prevalence of pleasure over pain in existence, because of the great amount of pain which is compatible with the necessary discharge of function and with continued existence. But this seems to overlook the large part which the *voluntary* element in function plays in connection with life and

development. In the higher spheres of life, however, he fully recognizes the weight of this voluntary element. "As soon as intelligence discovers that there are fixed objects, permanent sources of pleasure, and large groups of enduring interests, which yield a variety of such recurring enjoyments, the rational will preferring the greater to the less, will unfailingly devote its energies to the pursuit of these."—(Pessimism.)

All through life we are constantly choosing the agreeable and avoiding the painful, just as the child learning to use its hands, only in a higher and more complex way. "In this way the wise man seeks to keep his desires within the boundaries of possibility. He learns to abandon the wild, foolish, unguided longings of youth, and endeavors to satisfy himself, in a sense, with hopes and aims which rest on the basis of fact." And further: "To gain this command over one's life, to rise to the calm view of the larger collective ends, and to subordinate all particular impulses to a general dominant plan of felicity—this it may be said, means harsh self-discipline and fatiguing effort. I do not deny the fact. Yet reasonable persons will hardly imagine that such pain really renders doubtful the clear remainder of pleasurable conditions which is secured by these operations."—(Sully).

Self-restraint is unfailingly necessary to the largest measure of happiness. Without such restraint, we are tortured with futile desire, and in order to avoid the pain attending such desire, we voluntarily incur the milder pain of self-restraint. It is from such consideration the fact comes clearly into consciousness that the moral life is the adjustment of conflict in such way as to avoid the greater evil and secure the greater good. The greater balance of happiness can only be had by paying its price.

Making up the mind, or forming a resolution amidst conflicting considerations is a mental phenomenon which is familiar to every deliberative person, and it illustrates the conflict which concerns the adjustment of conduct to the situations of life. Franklin's "moral algebra," by means of which he determined the right thing to do, affords a graphic representation of the sphere of antagonism. Setting down his reasons *pro* and *con* on

the two sides of the equation, he then compared them together, estimating their values as accurately as possible, and cancelling the positive and negative equivalents, the remainder showed on which side the greater weight of reason lay, and determined the character of the resolution. All seemingly desirable things cannot be had, for they are in conflict, and one part excludes the other, till only a residue may be utilized on the side of enjoyment.

SECTION 230.—One of the most exquisite of pleasures is that of overcoming opposition and compassing an end in spite of its difficulties. This “contumacy in man,” as Seneca calls it, is an *inheritance* we should not think lightly of. Without struggle there can be no victory and none of the joy which comes of victory. But much depends on the prize for which the contest is had. The devouring passion among the votaries of fashion to excel in the trivial vanities of life, is never fully compensated by the vulgar feeling of such a triumph, even when it crowns the struggle. And in the lower ranks of society the disadvantages of position are such that the contestants are weighted with the enervating conviction that at best they can do little more than hold their own. The position and prospects of the intermediate classes have more to encourage. Here effort may win, and the winnings give pleasure. When persistence and endurance are summoned by the effort, its successful results are anticipated with keener relish than if it was made with little sacrifice. The apparent impossibility of doing a thing is sometimes the stimulus to undertaking it and the support of a long-continued struggle for its accomplishment. A small prize may in this way bring greater happiness than a much larger one which is backed by no heroism in the winning. The greater the pain of procuring, the greater the zest of enjoying. Within certain limits it is the contrast that tells. The race only gets the means of enjoying life by a struggle, by labor, by self-denial; and that every individual does not take his share of this self-denial is because of the incongruities of life, for which he and all others must suffer in some form;—and all this in accordance with the principles which

these chapters aim to elucidate,—that every good thing has its price.

The law of success in every field of endeavor is that, it is the reward of a certain sum of repugnance overcome. Be it some field of learning, some branch of science, some department of philosophy, some speciality in the arts or in the professions, distinction implies assiduous labor, attention to dry details, persistent bent of mind to the object in view. No man ever became an authority but through a deal of irksome labor, which no lover of ease would think of doing. Fame is the reward of toil now as well as in the heroic age, when Hercules said to his son Philoctetes :

“Thou knowest what toils, what labors I endured,
Ere I by virtue gained immortal fame;
Thou too, like me, by toils must rise to glory;
Thou too must suffer ere thou canst be happy.”

—[*Sophocles.*

SECTION 231.—Much quiet may come to the perturbed mind from the reflection that it might have been worse with us than it is. By contrast with lower conditions, we should be more content with our own. Set all on the same dead level, and we should lose both the example of the poorer, which reproaches us for whining, and the example of the better, which stimulates us to hopeful exertion. But if contrast with the lower favors content, contrast with the higher favors discontent ; and the two are interblended along the entire social scale. In regard to the acquisition of wealth, it is a common remark that success never brings contentment, but ever whets the desire for more. It is so in relation to knowledge, in relation to social and political rank. Those below are striving to enter the class next above, or so far as possible to ape it ; and while success in this direction gives pleasure, it is but the renewal of the stimulus to discontent and to further effort. Those who are at the very “top” are not satisfied, but are straining still further to surpass those below. Such as are in high official position are no more happy than those who have great wealth. The salary is not great enough to keep up the desired display—and it would not be enough if ever

so great—and many are tempted into questionable devices for relief. There is always something beyond them which they are striving to reach, and if not successful they are unhappy, and generally unhappy even if successful. There is no more wretched class of people than our political aspirants. “Ambition puffs up with vanity and wind ; and we are equally troubled either to see anybody before us, or nobody behind us.”—(Seneca). It is a fine thing to get to Congress, or to be the governor of a State ; but those who have mounted these rounds of the political ladder, want to go still higher. The most ambitious are desperate to get into the Senate, the Cabinet, the White House. To this end many are ready to lay aside their manliness, and become the tools of powerful classes who are able to reward them through the manipulation of public sentiment. Many are they who indulge the hope of one day being President of the United States, most of whom must be disappointed. But the attainment of this end does not satisfy. Few but want a second term after having tasted of the first ; and then even it goes hard to lay down power. The third term may be more desperately and persistently sought after than the first ; and this achieved, it may be thought of as a life tenure, and finally as a family possession to be transmitted to a royal line. When men have given way all life long to the ambition of place, this desire of occupying the highest may become an infatuation. Some of the aspirants suppress the manifestation of it better than others. It may be that disappointment in this direction has almost broken the hearts and shortened the lives of several prominent Americans ; yet, how many below them had envied them their happiness, illustrating well the mistaken identity of the phantoms we pursue. Of course the pleasure derived from the possession of place is an exquisite one, but it costs all it is worth, in the anxiety of mind in the struggle to reach it. And then to this we must add the dissatisfaction with it when had, and the disappointment of those who fail. Those with less ambition do not, indeed, enjoy the pleasure of position, but they escape on the other hand “ the penalties of greatness.”

"I envy all who pass their lives, secure
 From danger, to the world, to fame unknown,
 But those to greatness raised I envy not."

—*Euripides' Agamemnon.*

In this field as in so many others,—pleasure gained, price paid.

SECTION 232.—To a certain degree the pain is the measure of the enjoyment. The pleasure of taking food is in proportion to the pain of hunger. Yielding to slumber is sweeter for prolonged vigils. Rest is most welcome when we are really tired. The sense of chilliness adds to the gratefulness of warmth. As a rule the greater the pain of deprivation, the greater the pleasure of gratification. "Ainsi, tout de même qu'il n'est pas possible de separer la douleur du plaisir, tout de même il n'est pas possible qu'ils ne soient pas en proportion l'un avec l'autre. Les grandes joies ne sont qu'à la condition des grandes douleurs." —(Bouillier). "Surely a truer knowledge lays its fullest and intensest grasp upon the painful elements of life, and holds them as the fundamental conditions of its joys."—(Hinton).

This law holds among the higher sentiments. The pain which is suffered in the contemplation of misery, is the precise measure of the gratification which is felt in the contemplation of happiness. With an acute sense of justice, satisfaction with the prevalence of right is only equaled by outrage with the prevalence of wrong. The more the truth is loved, the greater the detestation of falsehood. The artistic sense more than another enjoys the beautiful and fitting, but at the same time suffers more from the presence of the incongruous and uncouth. The musical capacity of the ear is measured as well by its offense with discord as by its delight with concord. Symmetry is made more apparent by contrast with deformity. We judge of quality altogether by comparison, a principle which tricky dealers sometimes make use of to deceive their customers. The pleasure anticipated in the possession of an object is only equaled by the pain of missing it. The alternation of opposites in the emotions referred to in a previous chapter (Section 78), is to the point here, as when love turns into hate: "No hate so strong as what from dead love springs."—(Plato).

That pain and pleasure should be, to a certain extent, the measure of each other is to be expected from the fact that both depend on the same system of nerves; and that they should advance together in the career of development is also to be expected for the same reason. If the nerves are fine and sensitive, the pleasure is exquisite, and so also is the pain. In the lower animals there is a smaller range between the extreme of pain and the extreme of pleasure than in man; and in savages the range is less than in people of culture. It is true of compound as well as of simple feeling, that if the nervous seat of emotion favors a high degree of enjoyment, it favors equally a high degree of suffering. The more devoted the friendship, the greater the suffering when friends are torn asunder by any fatality. The greater the mother's love for her infant, the greater her anxiety when its life is in danger. And there is no escape from this dual action on the nerves of sensibility. The joy is sure to meet with its compensating sorrow. Members of the family, of the group of friends, must be surrendered one by one; and then the feeling of loss is commensurate with the remembrance of possession. And there is not a joy in all life, but has this poison in it, that it must come to an end at last.

"The flower that smiles to-day
To-morrow dies;
All that we wish to stay
Tempt and then flies."

And especially is this the penalty of living to be old.

Without a revolution in the environment, it would be cruelty to supersede the human, with a higher race of beings—cruelty to the higher race; for, even if it were vouchsafed exemption from the fatuities of human frailty, it could not escape the inevitable limitations of the physical conditions of life. "It is indisputable that the being whose capacities of enjoyment are low, has the greatest chance of having them fully satisfied; and a highly endowed being will always feel that any happiness which he can look for, as the world is constituted, is imperfect." Thus J. S. Mill. Wollaston declared that brutes are better off than

men, if there is no compensation in a life hereafter for human suffering here. But while it is no doubt true that mankind may, and in all probability do, enjoy more than they suffer, yet if all mankind were organized with fine nerves, gifted with high aspirations, and endowed with the skill and taste for highly artistic execution, then indeed would Wollaston's view of the situation be true.

SECTION 233.—If it be true that pleasure and pain are relative experiences, and that we enjoy and suffer to a large extent by comparison—and it is true—then the Utopians, who would establish a condition of society in which there would be nothing disagreeable, nothing repugnant, nothing painful, with no victories to win, and thus annihilate emotional contrasts to secure perfect happiness, would thereby destroy the very conditions of happiness. We can readily imagine a state of uninterrupted enjoyment; but we forget that we are looking at the matter from present experiences in which the sense of pain enlivens our conception of its opposite; and it is a trick of the emotions we cherish to assert their own eternity. Without its opposite to give the sense of enjoyment, it could not come into consciousness; or having once come into consciousness on its legitimate conditions, without alternation with contrast of feeling, it would very soon pall on the nerves of sensibility. Not only is the sensation something like the logarithm of stimulus, but if the stimulus be too long continued without variation, the nerves require something else for relief, and to break the monotony, even welcome a disagreeable sensation otherwise caused. Hence the mistake of Mohammedans regarding an exclusively sensual paradise, and of sensational Christians who think they will enjoy the rapture of a whole eternity shouting around the throne. It is a far more sensible rendering of common experience that “we can only get to heaven by going through hell”: “No cross, no crown.” The idea of making existence exclusively happy is like that of creating something out of nothing, or of getting a working power without an adequate source. In the utilization of steam as power there must be a long thermomet-

ric scale between the temperature of the vapor and that of surrounding space (section 54). Contrast in temperature is absolutely necessary to the existence of the working power; no more can there be pleasure and happiness without emotional contrast. The molecules of nearly all the chemical elements are dual or polar (section 47), the presence of one half of the unit always implying the presence of the other. It is so with pleasure and pain as elements of consciousness; therefore, does the moral outlook of life necessarily exclude the perfection of unalloyed bliss, or any near approach to it. The forms and degrees of pleasure and pain will change in the future as they have in the past, but they will always go hand in hand.

NOTE.—The views stated in this chapter have been familiar to the writer's mind for many years, but they were not written out till some months after having read in the *Popular Science Monthly* (November, 1877) an article on the Law of Differences, by John W. Saxon. On referring to the article, I find I have used some of the same illustrations, in my own way, however, and have been, perhaps, in other respects, influenced by it. As to that matter, however, Plato has somewhat the advantage of either of us in priority, both as to the doctrine and its illustrations (section 2). "Sad havoc makes he with our originalities."

Mr. Saxon's article skilfully molds the old doctrine into forms of modern thought. The following are extracts from it: "Keep in mind that, as all knowledge comes to us as the result of the *different*, so do all emotions of pain or of pleasure. Every quality that is thinkable implies its opposite, or at least its different in degree. Happiness and misery are only relative terms. Absolute happiness cannot exist any more than a magnetic needle with only one pole." "Take the happiness that comes from social position in life. It arises from the fact that we are higher up than some one else. Bring all to the same level, and it would be enough to make an angel weep to see how much happiness some people would lose. Many would be bankrupt. Take the tramps and vagabonds out of society, and the whole fabric would be cut down one story; for, to change the figure, they put one more round into the ladder—it matters not that it is at the bottom—and give the climber a chance to go one round higher. It is the length of the ladder that counts, no matter where the bottom is placed. What are wealth and poverty? Only relative terms. There is none so rich as the poor boy who has just received his first dollar for a week of hard work. We waste a great deal of pity on those who are born in the humbler ranks of life."

The following passage from George J. Romanes is valuable for its philosophy, as well as its moral, bringing out as it does that pleasure cannot be had without paying its price, and that the refusal of the price is nothing saved, since, if not paid, it must be made good in the form of penalty: "There is not much to be said on the recreation of men belonging to the upper classes. That most objec-

tionable of creatures, the gentleman at large without occupation, has a free choice before him of every amusement that the world has to give ; but one thing he is hopelessly denied—the keen enjoyment of recreation. Living from year to year in a round of varied pastimes, he becomes slowly incapacitated for forming habits of work, while at the same time he is slowly sapping all the enjoyment from play. For, although variety of amusement may please for a time, it is notorious that it cannot do so indefinitely. The intellectual changes which are involved in the changes of amusement are not sufficiently pronounced to recreate even the faculties on which the sense of amusement depends ; the mind, therefore, becomes surfeited with a tune too constantly played—even though the tune be played in frequently changing keys. For such men, if passed middle life, I have no advice to give. They have placed themselves beyond the possibility of finding recreation, and their only use in the world is to show the doom of idleness. They, more than even paupers, are the parasites of the social organism ; and we can scarcely regret that their lumpish life, being one of stagnation self-induced, should be one of miserable failure, to the wretchedness of which we can extend no hope.”—(*Popular Science Monthly*).

I conclude with the testimony in brief of still another witness: “A life from which everything that has in it the element of pain is banished, becomes a life not worth having ; or worse, of intolerable tedium and disgust. There is ample proof in the experience of the foolish among the rich, that no course is more fatal to pleasure than to succeed in putting aside everything that can call for endurance. The stronger and more generous faculties of our nature, debarred from their true exercise, avenge themselves by poisoning and embittering all that remains.”—(*Hinton, Mystery of Pain, 47*).

CHAPTER XXXVI.

USES IN GENERAL, SUMMARY, AND CONCLUSION.

[On the original plan of this volume, the following chapter, with four others which preceded it, constituted Part VII., with the general title: *Practical Illustrations of the Principle*. The four chapters have been left out, mainly because they would make the volume too large. A reason, also, for their omission is that they discuss practical questions which interest a far larger

class of readers than could any theoretical discussion of the philosophy of conflict. They are reserved for publication in a separate small volume with the title—*The Reforms: Their Difficulties and Possibilities*. Two of them discuss the question of Labor and Capital, one that of Finance, the other Various Reforms,—all practical questions of the day. The manner of statement adopted therein, it is believed, is within the easy comprehension of the people whose interests the discussions most concern. Whatever may be thought of the views therein given, they have been conceived in a spirit of sincere sympathy with “the people” as distinct from privileged classes.

The lacuna caused by the omission in question necessarily detracts somewhat from fullness of statement, and narrows the basis on which the following summary rests.]

SECTION 234.—The form of optimism which we have had particularly in view, is that which regards nature and life as essentially harmonious, the discord and pain which prevail being incidental or negative, and due mainly to the contumacy of man himself in not submitting to the order of nature, or in setting up his will against God’s will. It is this view, we think, which is answerable for so much misconception in the problems of life, leading to extravagant expectation and misdirected effort to do away with the inevitable.

If there is general antagonism in the constitution and action of matter and the forces, it cannot be without result to know it. If the constitution of things be dual and antagonistic, action must take place under resistance, and out of this resistance in relation to sentient being must arise discord and evil. If man is a part of the universe, this ineradicable antagonism must be incorporated into his own constitution; and hence antagonism must necessarily enter into society and be inseparable from life. It is direct and indirect, appearing for the most part, in practical life, in veiled and modified forms, in such way that one good cannot be had without the loss of another, or there cannot be gain on one side without loss on the other. And this being

deep-seated in the nature of things only admits of direction in a certain sense, when it comes within the sphere of the intellect and will, and then only through adequate motive. Wise men would use the appliances of education and statesmanship to develop and strengthen such motive. And this is the more necessary because there are times and stages in movement, when the better is only to be conserved by struggle.

If these propositions be true, then can there be no comprehensive philosophy of life without giving them due weight. If life cannot be noble without self-denial, if society cannot be great without the rigid observance of the sterner virtues, then should these principles be inculcated in relation to duty and organized as far as possible into practical life, as necessary means to the greatest good.

From the very beginning mankind have no doubt found a large proportion of the general sum of happiness in the glamour of delusions, which they had themselves wrought into existence under the pressure of emotional need. If delusion in its general form of optimism had no foibles with stings, it would be cruel to uncover its logical weaknesses. But human nature is such that every untruth will be probed to the bottom, and its character exposed, whether a practical good can be shown to grow out of the process or not. But optimism has foibles with stings. Optimism is not merely untrue; it is largely the occasion of wasted endeavor and of blasted hopes. If there be evils which are not incidental, and which the world cannot outgrow, then is it futile to labor for their extermination. The endeavor may be ever so well meant, but this would not justify it, if it is misdirected.

It is not always the case that the most enthusiasm is shown where the labor tells most for good; very often the endeavor becomes fanatical and self-sacrificing when there is no possibility of accomplishing the end aimed at. It is precisely when moral labor is the most futile that it is apt to be the most unselfish and devoted. It is not usually the happy, cheerful natures that make this mistake, but the more sensitive and despondent. A cheer-

ful person does not take so gloomy a view of existing conditions, as does one of the opposite temperament; bad does not seem so bad as to such as see through feelings of sympathy and despondency. He is pretty well satisfied with things as they are; while one of sensitive and sympathetic temperament dwells on the pain in the world till his feelings concerning it become morbid; and then if he believes that all this evil is unnecessary, that by effort and right-doing it may be greatly palliated, or wholly eradicated, he throws himself with all his might into the endeavor, be it wise or unwise, to bring about this end. This is very laudable in all that concerns the motive of the work, but not always so laudable in what concerns its fitness and efficiency.

On the contrary, there is no warrant for the defense of pessimism on the ground of amiable weaknesses. It is not, like optimism, apparently calculated to give pleasure by its very delusions. It affords no encouragement for trying to make the world better by active means. Its panacea is inaction. It would palliate the evils of existence by cultivating quietism, and end them through the extinction of existence by the stilling of the will. If it is a result of optimism to undertake too much, it is a result of pessimism to undertake too little. The error, as usual, lies in the extremes.

In tracing optimism and pessimism to differences of temperament as their respective sources, Mr. Sully doubtless overlooks a psychological peculiarity which complicates the subject. Very often persons of melancholy temperament are the most pronounced optimists, manifesting a zeal for the furtherance of perfection which is every way creditable to their goodness if not to their discernment. This is probably the artistic temperament, which will be satisfied with nothing short of perfection. And then, we must not forget the tendency of extremes to react into each other. The monk dreams of love, the starving castaway feasts on sumptuous viands, the Arctic explorer basks in sunny fields. In a different connection, however, Mr. Sully states this emotional tendency: "It is to be remarked that this idea of human improvement frequently takes the vaguer shape of the

formation of an *ideal* life, individual and social, which is regarded as possible and realizable. It would be found that writers who are disposed to be pessimists in relation to obvious facts frequently fall back on such an ideal conception. For example, ethical writers who are ready to take a very humble estimate of the average moral condition of mankind, as it actually presents itself now, find a solvent for this depressing view of things in the idea of a moral regeneration and elevation which clearly lie within human reach."—(Pes. 35). There are many such among earnest people; the authors of Political Justice and of Race Education are striking examples.

SECTION 235.—There are minds of a certain temper which will not resolve to do, unless the method is radical and heroic, and the end to be attained well nigh perfect. Is it temperance reform they want? Nothing but the universal and clean sweep of prohibition and total abstinence will answer the end. Is there injustice in the distribution of wealth? Let it be taken in hand for regulation by the State. Are there crying abuses in the exercise of political power? The remedy—abolish the State. Does remorseless monopoly crush? Confiscate rent. Is business dull? Issue more greenbacks, or increase the tariff. Are there religious abuses and degeneracy in the church? Abolish God. Are production and the support of life expensive? Invent the perpetual motion: and so on to the end of an almost endless list; and the last may be taken as the type of all of them. The perpetual motion runs perfectly in the inventor's head; but when he gets it into actual wheels, cogs, shafts, and levers, he is the most astonished man in the world to see it stand still. But he is almost certain to try again; and he may die at last in the futile attempt. Is such a one wasting life? The remedy would be a little knowledge of physics. It is quite so with the reformers who have perfect remedies for the cure of social and political evils. If they could set up the machinery of their invention for a little while, they would be driven by the result to the invention of reasons for its failure to run; and while the schemes had not cured the ills of life, they would often fail to cure their invent-

ors of their mania for perfection in human affairs. Some, however, would become wiser, and would be willing to accept of mitigation wherever it is to be had; and some might come to perceive that so far from its being a question of perfection, it is often a question of greater imperfection, and would even be willing to assist in arresting, if possible, certain tendencies in the direction of greater wrong.

Society-curing practice, like some diseases, breaks out from time to time with a sort of periodicity. It is the outcome of a peculiar, sympathetic, and sanguine temperament ill-disciplined for the kind of work it takes in hand. Its arguments are often specious, and its sophisms not easy to detect; but with sufficient knowledge of fundamental principles, it may be safely pronounced erroneous without the laborious examination of details. A motor of mysterious power, or a perpetual motion, is at once condemned by its pretensions, and no physicist inquires into its claims. If sociology, or even political economy, were as well understood as physics, no claim of a discovery of simple remedy for the evils of society would gain credence. We may go back to still more fundamental principles. If the doctrine of Conflict and its corollaries be true, all claims for social cure-alls may be set down at sight as extravagances. There is no catholicon for society any more than an elixir of life for perpetual youth, or a philosopher's stone for the transmutation of dross into gold. They are all dreams.

To some it may appear quite uncalled for, this protest against the impulsive character of reform movements, because the people so generally show little interest in them, being too busy with their own individual interests. It may be said that, while there is so much indifference, such movements can do no harm. But this would overlook the important fact that this very indifference is largely due to the wildness and impracticability, if not injustice, of certain attempted "reforms." If the measures of reform were generally more comprehensive and practical, and less one-sided and sensational, they would suffer fewer abortions to drive off practical people; and their steady growth in efficiency would

secure constantly greater co-operation, and the greatest good possible would be done.

The difference between a practical measure for good and a measure for impracticable perfection is very well illustrated by the anti-corn-law and chartist agitations which were both raging in England at the same time. The chartists believed that the free trade agitation, even if successful, would only tickle the surface a little, while theirs was the cause that would go to the root of things and cure all the evils. Just extend the suffrage and the people would combine on peoples' measures by unerring instinct, and justice and prosperity would forever reign in Great Britain. This form of delusion is generic and chronic; it has many species still undergoing development, rather than extinction. It is forgotten, or not known, that it is easy to deceive, corrupt, and mislead the rabble, and that such opportunities are always improved. The chartist petition with three million signatures, requiring sixteen men to carry it into the House of Commons, only shows how easy it is to be carried away with the delusive glamour of some measure that promises to be thorough and complete in its operations; while less pretentious measures are almost sure to accomplish more good. Chartism failed, but corn came in tariff free, and cheap bread greatly advanced the prosperity of England.

While it is quite likely that the general class of artistic impracticables is multiplying under the influences of existing civilization, there are, of course, many fields in which it finds ample occasion for the exercise of its peculiar powers. Especially is this the case in America, which is likely to become the nursery of an immense brood of vagaries; for even when they do not spring up in our own free soil, but originate in Europe, the system of espionage and repression in vogue there, sends them across to this country, where they take root and fail not to grow in our susceptible soil. It becomes us, therefore, in behalf of our own National interests, as well as on the more disinterested considerations of altruism, to anticipate these evils by all the fitting appliances which science, philosophy, and education

place in our hands. It has been a purpose of the present volume, whether successful or not, to assist in this work. The husbandry of effort would be greatly promoted by a just conception of what may or may not be accomplished; but if this, in the present state of our knowledge, cannot be had, as in many instances it cannot, the acknowledgment to ourselves of the well grounded distinction between eradicable and ineradicable evil is a primary condition of deliberate and well directed endeavor. We would be better satisfied with the palliation and mitigation of certain evils, if we were able to see that their complete extirpation is impossible. With such views to guide we should quit the fanatical waste of endeavor for "perfection," and aim rather to choose the less evil and the greater good, or more accurately, in all pairs of good and evil—for they mostly go in pairs—we would endeavor to choose such as have the greatest balance of good in them. This is, indeed, precisely what mankind have been all along unconsciously doing, by rough experience and the instinct growing out of it, rather than by conscious deliberation. While many practical matters are so complicated, and their elements still so obscure, that it is impossible to say how far they are manageable, or how far they are intractable, it is still to be kept in mind that the hopeful view should have the benefit of the doubt, and work should be done where the promise seems best for a happy result. Owing to the advance of science and the increasing knowledge of environment, it is but reasonable to expect that hereafter there will be more intelligent deliberation in human affairs; but we are not to be sanguine in this direction, owing to the tyranny of feeling and the power over human conduct of immediate and individual, rather than of remote and general, interests.

SECTION 236.—When not dominated by a corporate or conventional power, each individual acts for individual ends; and the action thus taking place and the ends thus accomplished make up the activities of the aggregate of society. What is best for society, taking long stretches of time into view, is not the aim of such action. It may contribute to this end, or it may not.

This can only be told by the result. Men act from immediate interest both when they clear off the timber from the rich plains and from the steep hillsides; but the one act makes the country richer for a long time, and the other, after a brief period, makes it poorer. When a people is rising, then must the concurrence of individual action promote the good in a general way; but when a people is declining in prosperity, then must the aggregate of individual action be the cause and measure of such decline. Civilizations rise and fall; and for both tendencies there must be adequate cause in individual action. Long continued prosperity, through the operation on individuals and communities of emulation in the vanities of life, leads to effeminacy, weakness, and decay. Individuals may see and lament this general tendency, but they will not forego conventional gratifications, for the sake of resisting it. In a high civilization the leading classes in society will not cultivate large families, though they plainly see that in not doing so there may soon be none of their blood to inherit their virtues. More immediate considerations determine the result. People will dissipate because it is the fashion, though they know it will ultimate in degeneracy. Thus it is that the very causes of prosperity operate till they bring about adversity; and where there is a curve of ascent there must be one of descent.

During the historical period nations and peoples have risen and fallen, with the attainment, at present, of greater general elevation than ever before. But even this general advance must reach its maximum—and in the quite near future, for anything we know to the contrary. We have emerged from the long period of semi-barbarism into which the Greek and Roman civilizations declined, and we may advance a good deal further by diversification rather than by elevation. As all movement goes in careers and not by continuous progress, every advance has its limit. If it proceeds further, the loss offsets the gain. This, of course, holds in every possible form of development. Many appear to believe that our civilization will be an exception. We are somewhat in the forenoon of its glorious day, and it is

easy to make the mistake of assuming that there will be no afternoon—its career is so long compared with the brief span of any one's conscious experience.

It would have been very natural for the followers of Alexander, at one time, to believe that they should indeed conquer the whole world ; but the progress of victory came to an end, and the empire of Alexander was soon broken to pieces. So the Romans might well have thought that universal empire would some day be theirs ; but the extension of the empire was arrested, and at length enemies broke through its defences, loyalty to Rome declined, and the promises of a more flourishing time were answered at last by the overthrow and extinction of Roman power. For ages it seemed but reasonable to believe that Christianity would take possession of all the earth, so greatly had it extended through the world ; but Mohammedanism appeared and made more rapid progress than even Christianity had made. It drove in the Christian outposts, and contracted the Christian territory by establishing Mohammedanism where Christianity had been. Then, indeed, Islam may have imagined itself destined to universal dominion. Having superseded Christianity on the east and south of Europe, and having actually planted itself on European territory on the west, surely it would eventually overwhelm all Christian Europe. But this dream was never fulfilled. If there is one power on earth which more than another has believed itself to be eternal, it is that of the pope. Its conceded divine origin and sanctions, and its absolute sovereignty over soul and body in Christendom, richly fed this confidence of expectation ; but this power, like every other, became tainted with the infirmities of its own greatness, and having reached its zenith, it began the long period of its decline. And then when Protestantism arose and spread like a consuming fire over central and western Europe, who could have foreseen that it would so soon find its balance, and there remain for ages, even while the forces, under whose auspices it had arisen, continued to progress ? Not one movement since history began has been continuous ; not one ever will be.

SECTION 237.—It may be objected that, if this doctrine be true, it disarms effort for a better future. It does nothing of the kind. The better, the possible good is only secured by eternal vigilance, by persistent struggle. There are periods, indeed—we may be entering upon one of them—when, without such labor systematically and steadily persevered in, the tending of certain lines of movement toward degeneracy may rapidly gain in strength; and there are times when, even with such labor as wisely directed as possible, the downward tendency may only be somewhat retarded. We may further illustrate by a conditional example: Admitting that the day will come when our great American Republic will be transformed into an empire, and that there are causes now at work to bring about this result, what is our duty? To resist these tendencies to the utmost. It is only by so doing that we can preserve our self respect and prolong the era of freedom by staving off to a more distant time the fatal consummation. To allow the drift in this direction to go on without resistance, would be to show ourselves unworthy of our inheritance of liberty; it would be to permit ourselves to degenerate into the status of subjects, and to deserve by inglorious indolence and truculence the fate of a servile subordination to absolute masters. Even such as pursue phantoms are more to be commended than those who fall into habits of indifference and refuse to do anything. The practical and efficient mind is neither of them. It is said of a great historical character that he never left the possible good undone to waste effort on the impossible better. He endeavored to mitigate the evils he could not cure; and this states very precisely what practical people may at any time consistently undertake to do.

We have mainly to do with the present and the immediate future. There are here two phases—what shall we do, and what shall we not do. The principles herein advocated give sufficient encouragement in the direction of doing and efficient caution in the direction of not doing; and define that in the doing there is good to promote and evil to abate. It is only through per-

sistent endeavor that progress is made, and man and society elevated to higher planes. Not only is activity inculcated, but its direction in a general way indicated, in order to be most effective.

Manliness, all heroic endeavor, most that is admirable in the world, come of the seeking to make things better, or to prevent them from becoming worse. "When shall love and sympathy and beneficence find ampler training, or patience, courage, dauntless devotion, nobler opportunities of exercise than in the war with evil?"—(Caird). Let no one imagine that the writer would discourage considerate effort for the retardation or arrest of wrong tendencies. Whoever so construes this book mistakes its spirit and the import of its doctrines. An error of this kind would be like that of confounding the law-government of the universe with fatalism. No principle of nature properly understood can in the least weaken the motives to well-doing; it should assist in giving them proper direction.

There is no rational warrant for insensibility, indifference, or misanthropy among the consequences of the doctrine of ineradicable evil. Rather should it chasten the tone of character and quicken the sensibilities to know that the universe is not built up on principles of perpetual joy. The poet Bryant has said: "In short, the melancholy feelings, when called up by their proper and natural causes, and confined to their proper limits, are the sources of almost all our virtues. The temperament of unbroken cheerfulness is the temperament of insensibility."

SECTION 238.—Nothing herein stated conflicts with the doctrine of Evolution properly understood. Evolution does not cover all phenomena; it has its limitations; at a certain stage of the movement it passes into degradation and dissolution. If, in their present condition, the higher races of mankind on earth were at the very apex of all possible attainment in civilization, the doctrine of Evolution would be just as true as if mankind were to go on progressing for untold ages. Antagonism or conflict is more fundamental than evolution (section 159). It

reaches the entire distance of the career of movement while evolution stops where degradation sets in. Antagonism is more wide spread and sends its roots down deeper, though, it may be, it does not carry so many branches laden with fruitful results as the tree of Evolution. Antagonism is an indispensable factor of Evolution (Chapter XXII.), and Evolution is one of the consequences of Antagonism, and they co-operate to the same ends so far as Evolution goes. They are names for different congeries of actions in the totality of phenomena. There is no quarrel between Evolution and Conflict.

SECTION 239. — The universe, viewed as a system of adjustments under the play of antagonistic forces, presents marvelous examples of harmony and adaptation, whence the good flows, but never unmixed, being always accompanied with its shadow of evil. Let us recapitulate a few instances which are open to the inspection of all. Thus, education cultivates sensibility and makes the necessary drudgeries of life more repulsive than before. Intelligence has its sources of enjoyment and improvement, but it often necessitates painful changes of opinion and of institutions which break up the intellectual and emotional habits of ages. The division of labor greatly facilitates production, but it makes automatons of laborers and is unfavorable both to intellectual and moral development. Invention in the application of the natural forces to the industries greatly increases man's power of production ; and while the wealth thus made possible is everywhere regarded as a great good, if not the *summum bonum* itself, it secures the facilities for luxurious indulgence and sensual dissipation. It is doing for us what conquest did for the Romans ; and in the midst of education, political corruption is on the increase. With the progress of civilization numerous evils are springing into existence, which must be dealt with, to retard, palliate, or when possible, to exterminate them. In view of these tendencies and counter tendencies emerges the obvious moral that we should be fairly content with the opportunities and possibilities of our own times. In some things they are better than

times past, in other things, worse. The average of any age to come may not be a great deal better than the average of the present. Indeed, it may be doubted whether the future will ever bring an age more buoyant and hopeful than that in which we live (section 189). The lurid glare of its evils is quite dimmed in the blaze of the lights which its conquests for good have everywhere kindled.

SECTION 240.—Attention has already been called to the penchant of the human mind first to seek rest in extremes. When the mind sets out it is apt to swing far in a particular direction before it stops. It is an example of motion in the direction of least resistance; it is easier thus to do than to keep on weighing opposing considerations, and meantime hold the judgment in suspense under the influence of all the apparent contradiction of reasons. The holding of the judgment in abeyance is not a satisfactory process to most minds. It is felt to be characterless, and neither one thing nor the other, totally without those strong and striking features with which decisive opinions flatter human egotism.

The elaborators of science have partaken quite fully with others in this weakness of our common nature. In most instances in which the evidence has been slow in accumulating, there have been usually two or more parties advocating conflicting theories, till at last it had to be admitted that all were in error in being extreme and exclusive, but each, perhaps, in the right, in elaborating a component element of the integral truth. Geology had its Neptunian and Plutonian schools, whose hostility was completely disarmed under more comprehensive views which utilized the truth in both. Even the doctrine of development has crept along from one extreme to another. First, its principal factor was held to be that of use or aptency (Lamarck); secondly, the direct action of the environment, together with migration, and isolation from the parent stock (St. Hilaire, Buffon, Wagner, Spencer); thirdly, natural selection (Darwin and Wallace). But maturer consideration is showing how these causes are related to one another, and even

blended with still others, in the production of the phenomena in question. The natural methods are not so poverty-stricken as the resources of the human mind appear usually to be; and further examples of extremism would only be tedious. Perhaps the writer has given a practical illustration of it in his treatment of Conflict; the reader must judge.

These considerations bear on the present subject in this, that the same tendency to the exclusiveness of extreme opinions characterizes human effort for the correction of abuses, even more than in the prosecution of science. It is easy to imagine a remedy on the warrant of a partial and fragmentary view of what is for the most part exceedingly complicated. It is the cheap and easy method. It is a far higher exercise of human power to take a comprehensive grasp of all the considerations, and find their logical balance, than to deal with them in the usual summary and extreme method. Unfortunately the results of wholeness of conception are apparently so tame as to attract little notice and obtain little credit. The moderate but comprehensive measures which are most practical and efficient, are not apt to take the fancy of dashing and impetuous reformers; nevertheless they stand wear and tear and can afford to bide their time. Optimism and pessimism, with all the brood of vain speculations and practical foibles to which they have given rise, are forms of ultraism which must share the common fate of perishable things. In a better philosophy, the optimism of Godwin and the pessimism of Schopenhauer must give way to the meliorism of Sully and others.

SECTION 241.—Possibly it may be in the nature of the view of life, which it has been the object of these chapters to define, to inculcate humility, and teach discretion in the presence of any evil of life with which we propose to deal. It should moderate expectancy, temper enthusiasm, and repress vagary. We are not, however, to be too sanguine of such results. There will be fanatics probably while the world lasts. But there is always a borderland where means avail. People who do not think need no guidance in this respect; they are always on the

safe side, believing with the many who take their opinions from "the air." It is the more intellectually active, without sufficient guidance or a sufficient basis of intellectual material to work on, that are most apt to run into the excesses of extreme opinions. Some generous natures might fall into extravagances, who, with a better philosophy as a chart for guidance, would not commit this error.

SECTION 242.—This view of nature and of life should teach resignation. If certain forms of evil are inevitable, and to be looked for, we shall not be taken by surprise when they come, and we shall deal with them as with any intractable thing. We are compelled every day of our lives to recognize certain necessities, and to adapt ourselves to them; and when these necessities involve suffering, we summon the necessary hardihood to meet them all the better for recognizing the fact that they are necessities. Happily there is a law of our nature by which we become "reconciled to inevitable destiny." Although not quite so true now as when Spinoza wrote, it is nevertheless still true, and always will be, that "human power is greatly limited, and is infinitely surpassed by the power of external causes; and thus it is that we have no absolute power of adapting to our use things external to ourselves. Still, all that befalls us contrary to what reason requires for our use and convenience, we bear with equanimity, if we do but know that we have fairly done our duty, that the power we possess does not extend so far as would have enabled us to escape the evil that has happened, and that we are a part of nature at large, whose orders we obey." And this is but a return, with some improvement, to the good old doctrine of the Stoics, which Seneca thus states: "There is not in the scale of nature a more inseparable connection of cause and effect than in the case of happiness and virtue; nor anything that more naturally produces the one, or more necessarily presupposes the other. For what is it to be happy, but for a man to content himself with his lot, in a cheerful and quiet resignation to the appointments of God?" A writer in the *Fortnightly* casts it in the forms of modern thought as follows :

"Whether life be worth having or not, whether a wise man ought or ought not to have chosen it, had he had the choice, life at all events we have, the choice has not been given us, and the only right thing for each of us to do, our bounden duty, to ourselves and to humanity, is, here and now, wisely and manfully, to make the best of it."—(T. W. Rhys Davids). Another: "The true philosophy on this as on all themes is neither optimism nor pessimism, but *omnism*, which sees both the good and the evil in nature, and aims to make the best of both."—(Dr. G. M. Beard). Even when we are sure that the cloud threatens it is well not wholly to overlook its "silver lining." At any rate if the storm must come, breast it. This is illustrated, in a grim way, it is true, by what a surgeon told of "after the battle" during our late war. Several officers were in the extemporized hospital, the worse for the battle. Two colonels were mortally wounded and knew they must die. One of them gave up to lamentation and despair; the other so far maintained his fortitude as not only to command himself, but to exhort his comrade to "die like a man." It was not long till both were silent in "the sleep that knows no waking" even amid the tumults of war. And our surgeon remembered the better example of the stoic soldier in "the hour and article of death," when in the more trying, because more self-conscious, times of the unbroken stillness of peace, it came his turn to lie down and die. Meet the inevitable we must, whether manfully or like poltroons.

SECTION 243.—The morality of this philosophy is founded on a very different basis from that of Stoicism or Puritanism, and yet like them, it inculcates the value of self-denial. It was in this interest Stoicism had such wide-spread influence, affecting even Christianity itself. Between judicious self-denial and fanatical self-mortification, there is a wide difference which has often been disregarded; hence, the harsh and dreary extremes of the puritan and the monk, and the often revolting devoutness of the hermit and recluse. Extremes always pass into error, and if the philosophy herein stated has any value, it is to show the

importance of finding the line of least discordance among the opposing forces in conduct.

In the Chinese philosophy the Mean is the method of virtue. On Buddhist authority it is thus stated: "But the Tathagata had discovered a Middle Path, which avoids these two extremities, a path which opens the eyes and bestows understanding, which leads to peace of mind, to the higher wisdom, to full enlightenment—in a word, to the Nirvana. And this path is the Noble Eightfold Path of right views, high aims, kindly speech, upright conduct, a harmless livelihood, perseverance in well-doing, intellectual activity, and earnest thought."—(From the Pali text of the Buddhist Pitakas in the so-called Sutra of the Foundation of the Kingdom of Righteousness.) The "extremities" here referred to are sensual gratification and asceticism. The Nirvana is the peace which comes by the middle way through the eightfold path. According to Aristotle, "the Mean is as the right reason determines." Seneca says: "He has reached the supreme good who is never sad, or excited by hope, but keeps an even and happy frame of mind by day and night." This oriental and classic doctrine of the Mean, or Middle Way in morals, accepted by such great bodies of mankind and for such long periods, shows how surely the great moral systems of the world have been derived from large experience amid the conflicting impulses of human nature.

The delusive and disappointing character of the prevalent optimistic idea that happiness and pleasure are to be had without a compensating sacrifice, is well shown by the fact that many who have tested it to its utmost, have been overtaken with incurable discontent. We must again repeat, what has been so often repeated and illustrated, that pleasure and happiness can only be had by paying their price; and that price consists in the judicious exercise of self-denial and self-restraint, and in the plying of worthful industry as a condition of all the nobler forms of enjoyment. This is the Middle Way. In the aggregate, no work no life; in regard to the individual, no employment no contentment. The way of the hero is to stand to his post in the

discharge of duty; and, not pursuing happiness as an end, he will achieve the most of it possible as the reward of right doing. There is nothing new in this; but the doctrine of Conflict shows how and why it is so, being part of the universal system in which there is contrast in the constitution of things and Conflict in the action of forces.

SECTION 244.—If this be true, the principle has a logical value in assisting to determine what the true course is in relation to the conduct of life. Any deep underlying principle, however, has this value. Evolution has it, and has exercised a powerful influence on the methods of regarding the course of history and of life. If the doctrine of Conflict be true—and it is—it has a similar logical value, and must co-operate with the doctrine of Evolution to shape the views of thinking people concerning the possibilities of life and destiny.

SECTION 245.—Industrial and social changes are mainly dependent on the capabilities of knowledge. Civilization owes all its advantages over savagery to discovery and invention, together with the accumulation of wealth and population. The moral frame-work of civilized society would fall to pieces, but for the physico-mental basis on which it rests. There is no doubt an immense field for further amplification in this direction. As one century since no one could have had the remotest idea of what would be done in a hundred years, so now, we can have no conception of the changes which the next century will bring. The great achievements in discovery and invention so rapidly made within our own recollection, are calculated unduly to inflate our expectations. But even while science, art, education, and invention are not without difficulties and drawbacks, we, nevertheless, regard the aggregate of their results as greatly preponderating in good; and out of this complication of causes springs an element from which there is much to hope. We refer to the mental discipline in consequence of which men hold their impulses in abeyance and do homage to the truth because it is the truth. It is the waiving of all bias in the interest of right thinking. So far as men are logical on the broadest

basis of fact, they may be just, for without being right in judgment it is impossible to be just in action.

The very appliances of industry have become potential educators for good or evil, and this unintentional, practical sort of education becomes contagious and spreads through the civilized world. In consequence of the multiplied uses of the natural forces, people are coming to lean less on providential interference and more on the inexorable laws of those forces. What shall be taught and how, for the best result under the complication of modern tendencies,—this may be the question of the times. Doubtless education must be adapted to the changing condition of things, and become associated with integral industry for the discipline of the body as well as of the mind, and though it may make little headway against the effects of the machine-industries, which are crushing the vitality and character out of a portion of the people, still it may play the part of a savior, be it ever so partial. It may make little headway against the mighty vanities, which are more and more absorbing the energies of life, and which it nurses while it aims to cripple, nevertheless will it have value, even far short of accomplishing in full the herculean task before it, if in some gratifying measure, it shall cause common sense to take the place of common folly.

But the good to be expected will not come so much through the influence of general education on the masses, as through the higher education which can only reach the comparatively few. If the directive agency of those most competent could be divorced from reckless ambition and class interests, and placed in situations where it would tell most for good, the world would soon be better off than it is. If this could be, the world's greatest benefactors would be those who prosecute research with the greatest acuteness, and the least warp of bias, and also such as, with true practical instincts, make the body of truth at hand most available for human well-being. We may picture Evolution to be advancing in three different lines. One is characterized by happiness, another by suffering, and the third by the directive agency growing out of science. It has been taken for

granted throughout this work that pleasure predominates over pain in existence. We have attempted to show that with the multiplication of results which we call progress, the conditions of happiness increase, and that in a similar way the conditions of misery increase. The directive agencies in life will make mistakes in the future as they have in the past, no doubt, but notwithstanding the ever increasing complexity of the problems of life, the errors should be greatly eliminated, and a clear margin of good results accrue to the credit of wiser direction in human affairs. And to this end it is believed that there are logical and moral uses for the principle of Conflict as an inextinguishable factor of nature and life.

SECTION 246.—But it is not so much what we suppose to be the utility of any doctrine that should recommend it to our acceptance. That may be a delusion and snare in the failure of accurate prevision, as a thousand examples in history prove. Is it founded in fact? Has it logical warrant? Is it true? This should be the direction of inquiry concerning any point of doctrine under examination, whatever may seem to be its uses or abuses. It is quite the fashion among reviewers to commend a work for presenting the sunny side of life. That is indeed very well. If it be the object of a book merely to administer to the emotions, then should it stimulate those which are pleasurable rather than such as are painful. But when it concerns history, science, or the philosophy of science, the case is different. It would hardly do then to suppress truth for the sake of sunshine; and the author should be most commendable who, with the greatest vigor and least bias, sets forth the truth as it is.

A LIBRARY

OF THE MOST IMPORTANT

STANDARD WORKS ON EVOLUTION.

I.

Origin of Species by Means of Natural Selection, or the Preservation of Favored Races in the Struggle for Life. By CHARLES DARWIN, LL. D., F. R. S. New and revised edition, with Additions. 12mo. Cloth, \$2.00.

"Personally and practically exercised in zoölogy, in minute anatomy, in geology, a student of geographical distribution, not in maps and in museums, but by long voyages and laborious collection; having largely advanced each of these branches of science, and having spent many years in gathering and sifting materials for his present work, the store of accurately-registered facts upon which the author of the 'Origin of Species' is able to draw at will is prodigious."—*Professor T. H. Huxley.*

II.

Variation of Animals and Plants under Domestication. By CHARLES DARWIN, LL. D., F. R. S. With Illustrations. Revised edition. 2 vols., 12mo. Cloth, \$5.00.

"We shall learn something of the laws of inheritance, of the effects of crossing different breeds, and on that sterility which often supervenes when organic beings are removed from their natural conditions of life, and likewise when they are too closely interbred."—*From the Introduction.*

III.

Descent of Man, and Selection in Relation to Sex. By CHARLES DARWIN, LL. D., F. R. S. With many Illustrations. A new edition. 12mo. Cloth, \$3.00.

"In these volumes Mr. Darwin has brought forward all the facts and arguments which science has to offer in favor of the doctrine that man has arisen by gradual development from the lowest point of animal life. Aside from the logical purpose which Mr. Darwin had in view, his work is an original and fascinating contribution to the most interesting portion of natural history."

IV.

On the Origin of Species; or, The Causes of the Phenomena of Organic Nature. By Professor T. H. HUXLEY, F. R. S. 12mo. Cloth, \$1.00.

"Those who disencumber Darwinism of its difficulties, simplify its statements, relieve it of technicalities, and bring it so distinctly within the horizon of ordinary apprehension that persons of common sense may judge for themselves, perform an invaluable service. Such is the character of the present volume."—*From the Preface to the American edition.*

V.

Darwiniana. Essays and Reviews pertaining to Darwinism. By ASA GRAY, Fisher Professor of Natural History (Botany) in Harvard University. 12mo. Cloth, \$2.00.

"Although Professor Gray is widely known in the world of science for his botanical researches, but few are aware that he is a pronounced and un-

A STANDARD EVOLUTION LIBRARY.

flinching Darwinian. His contributions to the discussion are varied and valuable, and as collected in the present volume they will be seen to establish a claim upon the thinking world, which will be extensively felt and cordially acknowledged. These papers not only illustrate the history of the controversy, and the progress of the discussion, but they form perhaps the fullest and most trustworthy exposition of what is to be properly understood by 'Darwinism' that is to be found in our language. To all those timid souls who are worried about the progress of science, and the danger that it will subvert the foundations of their faith, we recommend the dispassionate perusal of this volume."—*The Popular Science Monthly*.

VI.

Heredity: A Psychological Study of its Phenomena, Laws, Causes, and Consequences. From the French of TH. RIBOT. 12mo. Cloth, \$2.00.

"Heredity is that biological law by which all beings endowed with life tend to repeat themselves in their descendants: it is for the species what personal identity is for the individual. The physiological side of this subject has been diligently studied, but not so its psychological side. We propose to supply this deficiency in the present work."—*From the Introduction*.

VII.

Hereditary Genius: An Inquiry into its Laws and Consequences.

By FRANCIS GALTON, F. R. S., etc. New and revised edition, with an American Preface. 12mo. Cloth, \$2.00.

"The following pages embody the result of the first vigorous and methodical effort to treat the question in the true scientific spirit, and place it upon the proper inductive basis. Mr. Galton proves, by overwhelming evidence, that genius, talent, or whatever we term great mental capacity, follows the law of organic transmission—runs in families, and is an affair of blood and breed; and that a sphere of phenomena hitherto deemed capricious and defiant of rule is, nevertheless, within the operation of ascertainable law."—*From the American Preface*.

VIII.

The Evolution of Man. A Popular Exposition of the Principal Points of Human Ontogeny and Phylogeny. From the German of ERNST HAECKEL, Professor in the University of Jena. With numerous Illustrations. 2 vols., 12mo. Cloth, \$5.00.

"In this excellent translation of Professor Haeckel's work, the English reader has access to the latest doctrines of the Continental school of evolution, in its application to the history of man."

IX.

The History of Creation; or, the Development of the Earth and its Inhabitants by the Action of Natural Causes. A Popular Exposition of the Doctrine of Evolution in General, and of that of Darwin, Goethe, and Lamarck in Particular. By ERNST HAECKEL, Professor in the University of Jena. The translation revised by Professor E. RAY LANKESTER. Illustrated with Lithographic Plates. 2 vols., 12mo. Cloth, \$5.00.

"The book has been translated into several languages. I hope that it may also find sympathy in the fatherland of Darwin, the more so since it contains special morphological evidence in favor of many of the most important doctrines with which this greatest naturalist of our century has enriched science."—*From the Preface*.

A STANDARD EVOLUTION LIBRARY.

X.

Religion and Science. A Series of Sunday Lectures on the Ratione of Natural and Revealed Religion, or the Truths revealed in Nature and Scripture. By JOSEPH LE CONTE, LL. D. 12mo. Cloth, \$1.50.

XI.

Prehistoric Times, as illustrated by Ancient Remains and the Manners and Customs of Modern Savages. By Sir JOHN LUBBOCK, Bart. Illustrated. Entirely new revised edition. 8vo. Cloth, \$5.00.

The book ranks among the noblest works of the interesting and important class to which it belongs. As a *résumé* of our present knowledge of prehistoric man, it leaves nothing to be desired. It is not only a good book of reference, but the best on the subject.

XII.

Winners in Life's Race ; or, The Great Backboned Family. By ARABELLA B. BUCKLEY, author of "The Fairy-Land of Science" and "Life and her Children." With numerous Illustrations. 12mo. Cloth, gilt side and back, \$1.50.

XIII.

Physics and Politics ; or, Thoughts on the Application of the Principles of "Natural Selection" and "Inheritance" to Political Society. By WALTER BAGEHOT. 12mo. Cloth, \$1.50.

XIV.

The Theory of Descent and Darwinism. By Professor OSCAR SCHMIDT. With 26 Woodcuts. 12mo. \$1.50.

"The facts upon which the Darwinian theory is based are presented in an effective manner, conclusions are ably defended, and the question is treated in more compact and available style than in any other work on the same topic that has yet appeared. It is a valuable addition to the 'International Scientific Series.'"—*Boston Post*.

XV.

Outline of the Evolution Philosophy. By Dr. M. E. CAZELLES. Translated from the French, by the Rev. O. B. FROTHINGHAM ; with an Appendix, by E. L. YOUNG, M. D. 12mo. Cloth, \$1.00.

"This unpretentious little work will, no doubt, be used by thousands to whom the publications of Mr. Herbert Spencer are inaccessible and those of Auguste Comte repellent, by reason of their prolixity and vagueness. In a short space Dr. Cazelles has managed to compress the whole outline and scope of Mr. Spencer's system, with his views of the doctrine of progress and law of evolution, and a clear view of the principles of positivism."—*Nature (London)*.

XVI.

Principles of Geology ; or, The Modern Changes of the Earth and its Inhabitants, considered as illustrative of Geology. By Sir CHARLES LYELL, Bart. Illustrated with Maps, Plates, and Woodcuts. A new and entirely revised edition. 2 vols. Royal 8vo. Cloth, \$8.00.

The "Principles of Geology" may be looked upon with pride, not only as a representative of English science, but as without a rival of its kind anywhere. Growing in fullness and accuracy with the growth of experi-

A STANDARD EVOLUTION LIBRARY.

ence and observation in every region of the world, the work has incorporated with itself each established discovery, and has been modified by every hypothesis of value which has been brought to bear upon, or been evolved from, the most recent body of facts.

XVII.

Elements of Geology. A Text-Book for Colleges and for the General Reader. By JOSEPH LE CONTE, LL. D., Professor of Geology and Natural History in the University of California. Revised and enlarged edition. 12mo. With upward of 900 Illustrations. Cloth, \$4.00.

XVIII.

Animal Life, as affected by the Natural Conditions of Existence. By KARL SEMPER, Professor of the University of Würzburg. With Maps and 100 Woodcuts. 12mo. Cloth, \$2.00.

XIX.

Crayfish: An Introduction to the Study of Zoölogy. By Professor T. H. HUXLEY, F. R. S. With 82 Illustrations. 12mo. Cloth, \$1.75.

XX.

Anthropology: An Introduction to the Study of Man and Civilization. By EDWARD B. TYLOR, F. R. S. With 78 Illustrations. 12mo. Cloth, \$2.00.

"The students who read Mr. Tylor's book may congratulate themselves upon having obtained so easy, pleasant, and workman-like an introduction to a fascinating and delightful science."—*London Athenæum*.

XXI.

First Principles. By HERBERT SPENCER. Part I. The Unknowable. Part II. The Knowable. 1 vol., 12mo. \$2.00.

XXII.

The Principles of Biology. By HERBERT SPENCER. 2 vols., 12mo. \$4.00.

XXIII.

The Principles of Psychology. By HERBERT SPENCER. 2 vols., 12mo. \$4.00.

XXIV.

The Principles of Sociology. By HERBERT SPENCER. 12mo. 2 vols. \$4.00.

XXV.

The Data of Ethics. By HERBERT SPENCER. Being Part I, Vol. I, of "The Principles of Morality." 12mo. Cloth, \$1.25.

XXVI.

Illustrations of Universal Progress. By HERBERT SPENCER. 12mo. Cloth, \$2.00.

For sale by all booksellers ; or, sent by mail, post-paid, on receipt of price.

New York: D. APPLETON & CO., 1, 3, & 5 Bond Street.

ANIMAL INTELLIGENCE.

By GEORGE J. ROMANES, F. R. S.,
Zoölogical Secretary of the Linnæan Society, etc.

12MO. CLOTH, \$1.75.

"My object in the work as a whole is twofold: First, I have thought it desirable that there should be something resembling a text-book of the facts of Comparative Psychology, to which men of science, and also metaphysicians, may turn whenever they have occasion to acquaint themselves with the particular level of intelligence to which this or that species of animal attains. My second and much more important object is that of considering the facts of animal intelligence in their relation to the theory of descent."—*From the Preface.*

"Unless we are greatly mistaken, Mr. Romanes's work will take its place as one of the most attractive volumes of the INTERNATIONAL SCIENTIFIC SERIES. Some persons may, indeed, be disposed to say that it is too attractive, that it feeds the popular taste for the curious and marvelous without supplying any commensurate discipline in exact scientific reflection; but the author has, we think, fully justified himself in his modest preface. The result is the appearance of a collection of facts which will be a real boon to the student of Comparative Psychology, for this is the first attempt to present systematically well-assured observations on the mental life of animals."—*Saturday Review.*

"The author believes himself, not without ample cause, to have completely bridged the supposed gap between instinct and reason by the authentic proofs here marshaled of remarkable intelligence in some of the higher animals. It is the seemingly conclusive evidence of reasoning powers furnished by the adaptation of means to ends in cases which can not be explained on the theory of inherited aptitude or habit."—*New York Sun.*

"The high standing of the author as an original investigator is a sufficient guarantee that his task has been conscientiously carried out. His subject is one of absorbing interest. He has collected and classified an enormous amount of information concerning the mental attributes of the animal world. The result is astonishing. We find marvelous intelligence exhibited not only by animals which are known to be clever, but by others seemingly without a glimmer of light, like the snail, for instance. Some animals display imagination, others affection, and so on. The psychological portion of the discussion is deeply interesting."—*New York Herald.*

"The chapter on monkeys closes this excellent work, and perhaps the most instructive portion of it is that devoted to the life-history of a monkey."—*New York Times.*

"Mr. Romanes brings to his work a wide information and the best of scientific methods. He has carefully culled and selected an immense mass of data, choosing with admirable skill those facts which are really significant, and rejecting those which lacked sustaining evidence or relevancy. The contents of the volume are arranged with reference to the principles which they seem to him to establish. The volume is rich and suggestive, and a model in its way."—*Boston Courier.*

"It presents the facts of animal intelligence in relation to the theory of descent, supplementing Darwin and Spencer in tracing the principles which are concerned in the genesis of mind."—*Boston Commonwealth.*

"One of the most interesting volumes of the series."—*New York Christian at Work.*

"Few subjects have a greater fascination for the general reader than that with which this book is occupied."—*Good Literature, New York.*

For sale by all booksellers; or sent by mail, post-paid, on receipt of price.

New York: D. APPLETON & CO., 1, 3, and 5 Bond Street.

THE SCIENCE OF POLITICS.

By **SHELDON AMOS, M. A.,**
Author of "The Science of Law," etc.

12MO. - - - - - CLOTH, \$1.75.

CONTENTS: Chapter I. Nature and Limits of the Science of Politics; II. Political Terms; III. Political Reasoning; IV. The Geographical Area of Modern Politics; V. The Primary Elements of Political Life and Action; VI. Constitutions; VII. Local Government; VIII. The Government of Dependencies; IX. Foreign Relations; X. The Province of Government; XI. Revolutions in States; XII. Right and Wrong in Politics.

"It is an able and exhaustive treatise, within a reasonable compass. Some of its conclusions will be disputed, although sterling common sense is a characteristic of the book. To the political student and the practical statesman it ought to be of great value."—*New York Herald*.

"The author traces the subject from Plato and Aristotle in Greece, and Cicero in Rome, to the modern schools in the English field, not slighting the teachings of the American Revolution or the lessons of the French Revolution of 1793. Forms of government, political terms, the relation of law written and unwritten to the subject, a codification from Justinian to Napoleon in France and Field in America, are treated as parts of the subject in hand. Necessarily the subjects of executive and legislative authority, police, liquor, and land laws are considered, and the question ever growing in importance in all countries, the relations of corporations to the State."—*New York Observer*.

"The preface is dated at Alexandria, and the author says in it that a two years' journey round the world—in the course of which he visited the chief centers of political life, ancient and modern, in Europe, America, Australasia, Polynesia, and North Africa—not only helped him with illustrations, but was of no small use to him in stimulating thought. Mr. Amos treats his subject broadly, and with the air of having studied it exhaustively. The work will be of real assistance to the student of political economy, and even to the reader who wishes to extend his general knowledge of politics without a regular course of reading."—*Boston Transcript*.

"The work is one of the most valuable of its series, discussing its subject in all its phases as illustrated in the world's history. The chapters on Constitutions, on Foreign Relations, on the Province of Government, and on Right and Wrong in Politics, are particularly able and thoughtful. In that on Revolutions in States, the unreasonableness of the attempted revolution of the Southern States in this country is disposed of in a few incisive sentences."—*Boston Gazette*.

For sale by all booksellers; or sent by mail, post-paid, on receipt of price.

New York: D. APPLETON & CO., 1, 3, & 5 Bond Street.

DISEASES OF MEMORY:

AN ESSAY IN THE POSITIVE PSYCHOLOGY.

By TH. RIBOT,

Author of "Heredity," etc.

TRANSLATED FROM THE FRENCH BY WILLIAM HUNTINGTON SMITH.

12mo. Cloth, \$1.50.

"Not merely to scientific, but to all thinking men, this volume will prove intensely interesting."—*New York Observer*.

"M. Ribot has bestowed the most painstaking attention upon his theme, and numerous examples of the conditions considered greatly increase the value and interest of the volume."—*Philadelphia North American*.

"'Memory,' says M. Ribot, 'is a general function of the nervous system. It is based upon the faculty possessed by the nervous elements of conserving a received modification and of forming associations.' And again: 'Memory is a biological fact. A rich and extensive memory is not a collection of impressions, but an accumulation of dynamical associations, very stable and very responsive to proper stimuli. . . . The brain is like a laboratory full of movement where thousands of operations are going on all at once. Unconscious cerebration, not being subject to restrictions of time, operating, so to speak, only in space, may act in several directions at the same moment. Consciousness is the narrow gate through which a very small part of all this work is able to reach us.' M. Ribot thus reduces diseases of memory to law, and his treatise is of extraordinary interest."—*Philadelphia Press*.

"The general deductions reached by M. Ribot from the data here collected are summed up in the formulation of a law of regression, based upon the physiological principle that 'degeneration first affects what has been most recently formed,' and upon the psychological principle that 'the complex disappears before the simple because it has not been repeated so often in experience.' According to this law of regression, the loss of recollection in cases of general dissolution of the memory follows an invariable path, proceeding from recent events to ideas in general, then to feelings, and lastly to acts. In the best-known cases of partial dissolution or aphasia, forgetfulness follows the same course, beginning with proper names, passing to common nouns, then to adjectives and verbs, then to interjections, and lastly to gestures. M. Ribot submits that the exactitude of his laws of regression is verified in those rare cases where progressive dissolution of the memory is followed by recovery, recollections being observed to return in an inverse order to that in which they disappeared."—*New York Sun*.

"To the general reader the work is made entertaining by many illustrations connected with such names as Linnæus, Newton, Sir Walter Scott, Horace Ver-net, Gustave Doré, and many others."—*Harrisburg Telegraph*.

"The whole subject is presented with a Frenchman's vivacity of style."—*Providence Journal*.

"It is not too much to say that in no single work have so many curious cases been brought together and interpreted in a scientific manner."—*Boston Evening Traveller*.

"Specially interesting to the general reader."—*Chicago Interior*.

For sale by all booksellers; or sent by mail, post-paid, on receipt of price.

New York: D. APPLETON & CO., 1, 3, & 5 Bond Street.

MYTH AND SCIENCE.

By TITO VIGNOLI.

12mo. Cloth, \$1.50.

CONTENTS: The Ideas and Sources of Myth; Animal Sensation and Perception; Human Sensation and Perception; Statement of the Problem; The Animal and Human Exercise of the Intellect in the Perception of Things; The Intrinsic Law of the Faculty of Apprehension; The Historical Evolution of Myth and Science; Of Dreams, Illusions, Normal and Abnormal Hallucinations, Delirium, and Madness.

"His book is ingenious; . . . his theory of how science gradually differentiated from and conquered myth is extremely well wrought out, and is probably in essentials correct."—*Saturday Review*.

"Tito Vignoli's treatise is a valuable contribution to the public book-table at the present moment, when the issues between faith and fact are so much discussed. The author holds that the myth-making faculty is a constant attendant of human progress, and that its action is manifest to-day in the most highly cultivated peoples as well as in the most undeveloped. The difference is, that its activity in the former case is limited, or rather neutralized, by the scientific faculties, and consequently is no longer allowed to grow into legends and mythologies of the primitive pattern. The author traces both myth and science to their common source in sensation and perception, which he treats under the separate titles of 'animal' and 'human.' He makes clear the distinctive operations of perception and apprehension, and traces, in a wide survey of history and human life, a most interesting array of examples illustrating the evolution of myth and science."—*New York Home Journal*.

"The book is a strong one, and far more interesting to the general reader than its title would indicate. The learning, the acuteness, the strong reasoning power, and the scientific spirit of the author, command admiration."—*New York Christian Advocate*.

"An essay of such length as to merit a different title, and of sufficient originality to merit more than common attention."—*Chicago Times*.

"An attempt made, with much ability and no small measure of success, to trace the origin and development of the myth. The author has pursued his inquiry with much patience and ingenuity, and has produced a very readable and luminous treatise."—*Philadelphia North American*.

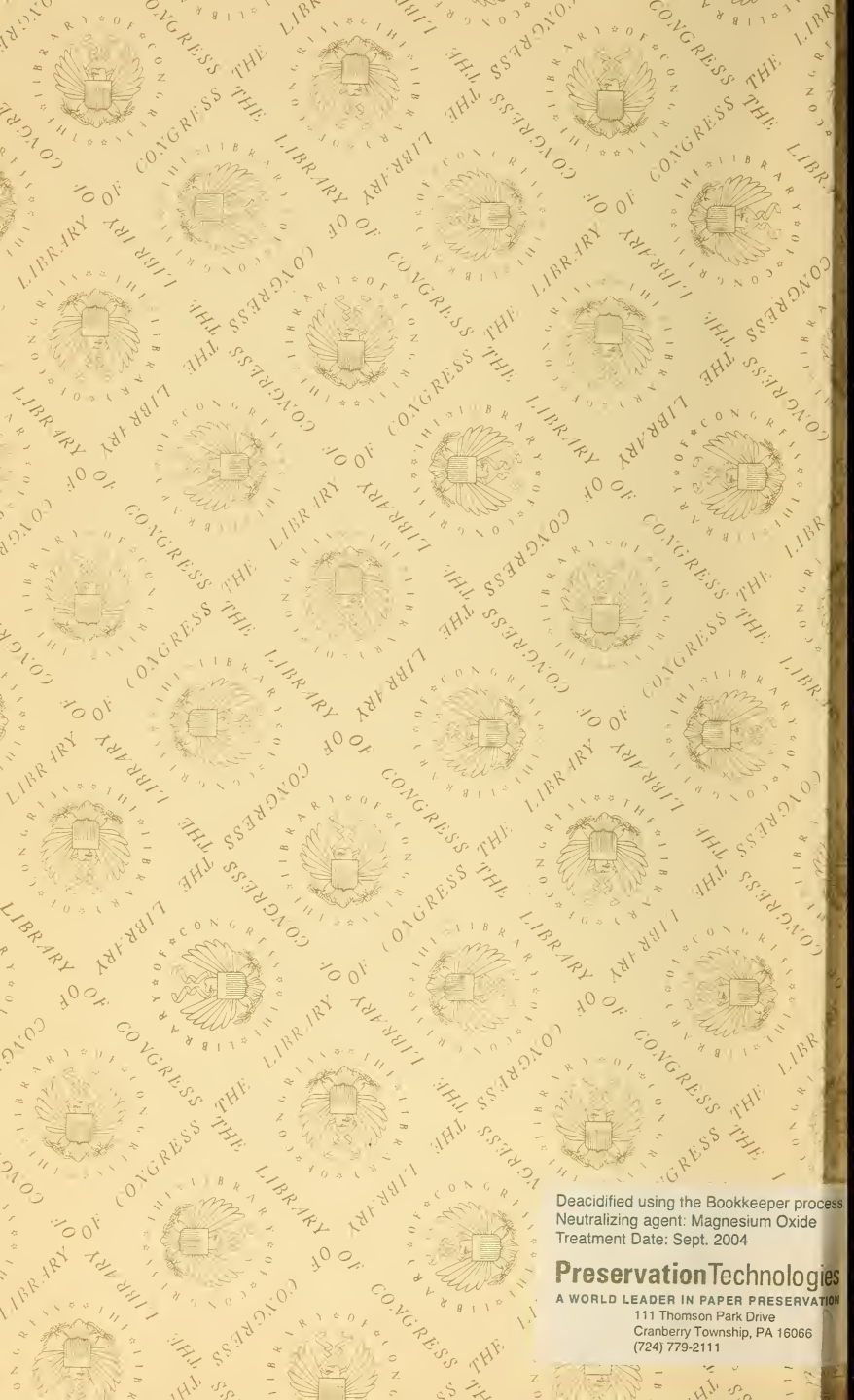
"A very interesting work, which, first published in Italy, created a great deal of interest there, and will scarcely do less in this country."—*Boston Post*.

"This intensely interesting volume."—*Albany (New York) Press*.

"It is a curious if not startling contribution both to psychology and to the early history of man's development."—*New York World*.

For sale by all booksellers; or sent by mail, post-paid, on receipt of price.

New York: D. APPLETON & CO., 1, 3, & 5 Bond Street.



Deacidified using the Bookkeeper process
Neutralizing agent: Magnesium Oxide
Treatment Date: Sept. 2004

Preservation Technologies

A WORLD LEADER IN PAPER PRESERVATION

111 Thomson Park Drive
Cranberry Township, PA 16066
(724) 779-2111



LIBRARY OF CONGRESS



0 013 192 917 1

